

THE IMPACTS OF HEALTH IMPACT ASSESSMENT:
A REVIEW OF 54 HEALTH IMPACT ASSESSMENTS, 2007-2012

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ABSTRACT

LISA SINGLETON-BALDREY: The Impacts of Health Impact Assessment: A Review of 54 Health Impact Assessments, 2007-2012
(Under the direction of Dr. Jacqueline MacDonald Gibson)

Increasing rates of chronic disease and mortality across the United States have prompted public health officials and others to call for increased use of health impact assessment (HIA) to inform policies projects, plans, and programs in domains outside the health-care sector. This project reviewed 54 HIAs to determine whether they used quantitative health risk assessment methods and whether they affected decision-making. The impacts on decision-making were determined from a survey of HIA practitioners and publicly available documents and were categorized using a novel classification system. This research indicates that HIAs are impacting decision-making in the United States to varying degrees. HIAs rarely provide quantitative estimates of health outcomes, though survey results suggest that HIA practitioners believe quantitative assessments would increase the potential for impacts on decision-making.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xii
INTRODUCTION.....	1
BACKGROUND	3
<i>HIA in the United States: 1999-2012.....</i>	<i>3</i>
<i>The HIA Process</i>	<i>5</i>
<i>Previous Studies.....</i>	<i>6</i>
<i>Purpose of this study.....</i>	<i>7</i>
METHODOLOGY	9
RESULTS	14
<i>Impacts of HIA</i>	<i>15</i>
<i>Quantitative Health Risk Assessment</i>	<i>18</i>
<i>Limitations in HIAs.....</i>	<i>21</i>
DISCUSSION	23
APPENDIX A: SURVEY QUESTIONS.....	28
APPENDIX B: SUMMARY TABLES.....	38
APPENDIX C: SURVEY RESULTS.....	102

REFERENCES..... 109

LIST OF TABLES

Table

1. Impact classifications.....	11
2. Characteristics of survey respondents.....	16
3. HIAs that presented quantitative estimates of health outcomes.....	19
B.1. Community Health Assessment: Bernal Heights Preschool.....	38
B.2. City of Ramsey: Health Impact Assessment.....	39
B.3. Gambling on the Health of the Public: A Rapid Health Impact Assessment for an Urban Casino.....	40
B.4. Healthy Tumalo Community Plan.....	41
B.5. Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic.....	42
B.6. Yellowstone County/City of Billings Growth Policy: Health Impact Assessment.....	43
B.7. A Health Impact Assessment of the Healthy Families Act of 2009.....	45
B.8. A Rapid Health Impact Assessment of the Long Beach Downtown Plan.....	46
B.9. Zoning for a Healthy Baltimore: A Health Impact Assessment of the Transform Baltimore Comprehensive Zoning Code Rewrite.....	47
B.10. A Health Impact Assessment of California Assembly Bill 889: The California Domestic Work Employee Equality, Fairness, and Dignity Act of 2011.....	48
B.11. Health Impact Assessment: Accessory Dwelling Units.....	50
B.12. Rapid Health Impact Assessment: Crook County/City of Prineville Bicycle and Pedestrian Safety Plan.....	51
B.13. HB 2800: Oregon Farm to School and School Garden Policy.....	53

B.14. Humboldt County General Plan Update Health Impact Assessment.....	55
B.15. A Health Impact Assessment of Potential Modifications to Physical Education Requirements in California.....	56
B.16. Concord Naval Weapons Station Reuse Project Health Impact Assessment.....	57
B.17. Fort McPherson Rapid Health Impact Assessment.....	59
B.18. 29 th St./San Pedro St. Area Health Impact Assessment.....	60
B.19. SE 122 nd Avenue Planning Study Health Impact Assessment.....	62
B.20. Hood River County Health Department Health Impact Assessment for the Barrett Property.....	63
B.21. Health Impact Assessment: National Nutrition Standards for Snack and a la Carte Foods and Beverages Sold in Schools.....	64
B.22. HOPE VI to HOPE SF San Francisco Public Housing Redevelopment.....	66
B.23. Merced County General Plan Update.....	67
B.24. Health Impact Assessment: Point Thomson Project.....	68
B.25. Spokane University District Pedestrian/Bicycle Bridge Health Impact Assessment.....	70
B.26. Mass Transit Health Impact Assessment: Potential Health Impacts of the Governor’s Proposed Redirection of California State Transportation Spillover Funds.....	71
B.27. Pittsburg Railroad Avenue Specific Plan Health Impact Assessment.....	72
B.28. Aerotropolis Atlanta Brownfield Redevelopment Health Impact Assessment.....	74
B.29. Health Impact Assessment 2010 Hawai’i County Agriculture Development Plan.....	75
B.30. Health Impact Assessment of a Cap-and-Trade Framework.....	76

B.31. Page Avenue Health Impact Assessment.....	77
B.32. Assessment of Open Burning Enforcement in La Crosse County.....	78
B.33. Health Impact Assessment of Gender Pay Inequity.....	79
B.34. Red Dog Mine Extension Aqqaluk Project Final Supplemental EIS.....	80
B.35. Health T for a Healthy Region: Health Impact Assessment of Proposed MBTA Service Cuts and Fare Increases.....	81
B.36. Rapid Health Impact Assessment: Outagamie Biosolids Storage Facility.....	82
B.37. Strategic Health Impact Assessment on Wind Energy Development in Oregon.....	83
B.38. Health Impact Assessment Report: Alcohol Environment- Village of Weston, WI.....	84
B.39. Health Impact Assessment: Aberdeen Pedestrian Transportation Plan.....	85
B.40. A Community Health Impact Assessment of Transit-Oriented Development Policy in Saint Paul, Minnesota.....	86
B.41. Health Impact Assessment on NMRT’s Request for a Special Use Permit.....	87
B.42. The Health Impact Assessment of the Commonwealth Edison Advanced Metering Infrastructure Deployment.....	88
B.43. Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment.....	89
B.44. A Health Impact Assessment of the Healthy Families Act of 2009: Maine Addendum.....	90
B.45. A Health Impact Assessment of the Healthy Families Act of 2009: Massachusetts Addendum.....	91
B.46. Pathways to Community Health: Evaluating the Healthfulness of Affordable Housing Opportunity Sites along the San Pablo Avenue Corridor Using Health Impact Assessment.....	92

B.47. A Health Impact Assessment of Paid Sick Days: New Jersey Addendum.....	94
B.48. Paid Sick Days Will Improve the Health of all Milwaukee Residents.....	95
B.49. A Health Impact Assessment of the Healthy Families Act of 2009: New Hampshire Addendum.....	96
B.50. Paid Sick Days Will Improve the Health of All Denver Residents.....	97
B.51. A Health Impact Assessment of the California Healthy Families, Healthy Workplaces Act of 2008.....	98
B.52. Rock Prairie Dairy Rapid Health Impact Assessment.....	99
B.53. Rapid Health Impact Assessment: Vancouver Comprehensive Growth Management Plan 2011.....	100
B.54. Hospitals and Community Health HIA: A Study of Localized Health Impacts of Hospitals.....	101

LIST OF FIGURES

Figure

1. Health impact assessment is a rapidly growing field.....	3
2. Distribution of HIA use in the U.S. across multiple sectors.....	4
3. Distribution of the 54 reviewed HIAs across multiple sectors.....	15
4. Impact classifications for each of the studied HIAs, further categorized by sector.....	17

LIST OF ABBREVIATIONS

EIA	Environmental Impact Assessment
HIA	Health Impact Assessment
NEPA	National Environmental Policy Act
U.S.	United States

INTRODUCTION

For more than 30 years, health impact assessment (HIA) has been used in Europe, Australia, Canada, and parts of Asia to promote awareness among decision-makers in multiple sectors of the potential public health consequences of the choices they make. While the practice of HIA is much more recent in the United States, it has gained prominence among public health officials as a promising approach to chronic disease prevention.

This article reports the results of a review of 54 U.S. HIAs completed from 2007 to 2012 and a survey of the practitioners of those HIAs. The review and survey were designed to determine whether (a) the HIAs affected decision-making in non-health sectors; (b) the HIAs provided quantitative estimates of morbidity and/or mortality would be caused or avoided by the alternative choices facing the decision-makers for whom the HIAs were intended; and (c) HIA practitioners perceive value in such quantitative estimates of health effects. Dannenberg et al. previously reviewed HIAs conducted in the United States from 1999-2007 and HIAs focused on transportation infrastructure carried out between 2004 and 2011 (Dannenberg et al. 2008; Dannenberg et al. 2011). We build on those reviews by

- Reviewing HIAs not included in these prior reviews

- Characterizing the impacts of each HIA according to a novel classification scheme
- Evaluating the extent to which the HIAs quantify the effects of decisions on health outcomes (rather than on health determinants), and
- Surveying the authors of the HIAs about whether they perceive that quantitative estimates of the health effects of decisions would benefit the decision process.

This work provides important additional insights on the degree to which HIAs are affecting the decisions they are intended to inform and on whether the influence of HIAs could be improved through expanded use of quantitative techniques drawn from the field of risk assessment. A 2011 review of the use of quantitative techniques in U.S. HIAs found that quantification of health effects of decisions is extremely rare; the authors were only able to find 14 HIAs that included quantitative estimates of health impacts among the more than 100 HIAs completed (Bhatia & Seto 2011). Of those 14 quantitative HIAs, 12 estimated changes in health outcomes that would occur as a result of the policy, project, plan, or program under consideration. The other two HIAs estimated quantitative effects on health determinants (body mass impacts and population weight) but not on the ultimate health outcomes.

This paper first presents a brief overview of the use of HIA in the U.S. Then, we discuss our methods for reviewing the impacts of the 54 HIA case studies and for surveying HIA practitioners. We present the results of our review of HIA impacts and the survey of HIA practitioners. We conclude with observations about the potential for growth in the use of HIAs and for expanded use of quantitative health risk estimates in HIAs.

BACKGROUND

HIA in the United States: 1999-2012

In 1999, the San Francisco Department of Public Health (SFDPH) completed the first HIA in the U.S. Since then, HIA use has become increasingly common (figure 1), with at least 115 assessments completed to date by universities, community groups, independent HIA consulting groups, and departments of health, planning, and transportation (National Research Council 2011; Health Impact Project 2011). Additionally, 64 HIAs, more than double the amount of reports published in 2011, are currently in progress, and will contribute to this growing field.

In the U.S., a diverse range of projects, policies, plans, and programs have been evaluated using the HIA process. HIAs are commonly used to assess zoning and growth

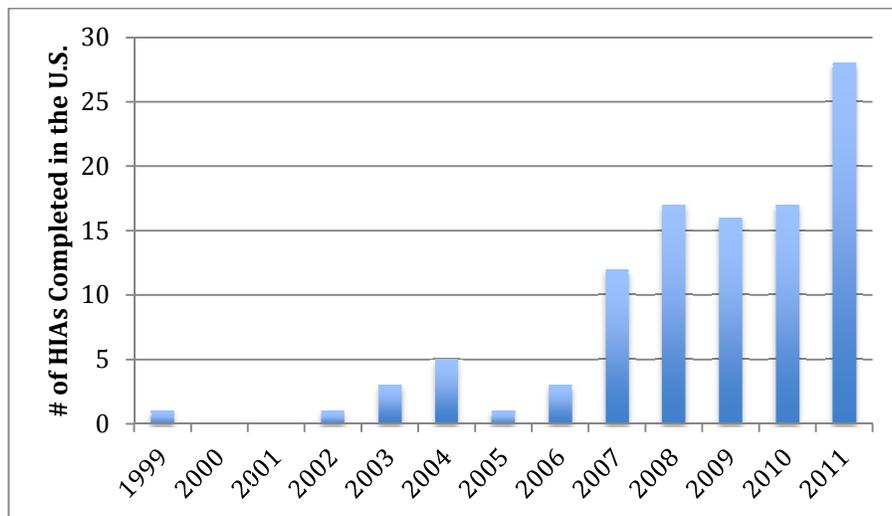


Figure 1: Health impact assessment is a rapidly growing field SOURCE: Health Impact Project, 2012

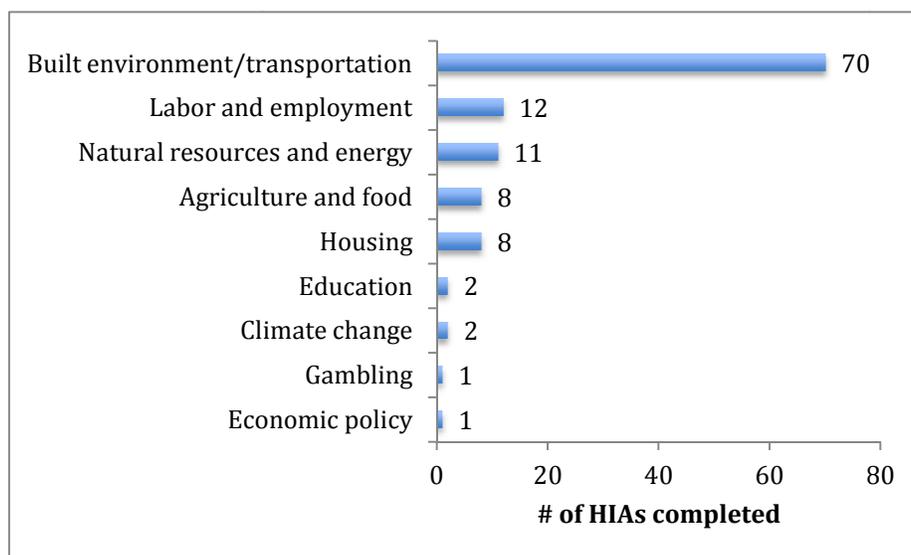


Figure 2: Distribution of HIA use in the U.S. across multiple sectors SOURCE: Health Impact Project (2012) and consultation with HIA practitioners

plans, and have also been applied to the education sector, as well as transportation projects and labor policies. Figure 2 presents the distribution of HIA use in the U.S. amongst varying sectors. It is evident that HIA is more commonly used to assess proposals related to the built environment and transportation, but also that HIA can be extended to include a variety of sectors, including energy and agriculture.

Though there are no federal laws that require the use of HIA, the National Environmental Policy Act (NEPA) stipulates that an environmental impact assessment (EIA) be conducted for decisions that would result in major impacts on the “human environment” (Wernham 2011). NEPA requires that health effects relating to these decisions be considered as part of an EIA. However, the magnitude of these health analyses is often minimal (National Research Council 2011).

The consideration of health as it relates to policies, projects, programs and plans will lead to improved decisions that maximize health benefits, while minimizing health

detriments (National Research Council 2011). Growing rates of chronic disease and escalating healthcare expenditure in the U.S. provide additional motivation for the use of HIA. Several chronic diseases are affected by modifiable social, behavioral, and environmental factors influenced by decisions outside the healthcare sector. With the burden of chronic disease escalating, it is becoming increasingly important to improve the health of the population in a bid to reduce health care expenditure. In 2010, the United States spent almost \$2.6 trillion on healthcare, or 17.9% (The Henry J. Kaiser Family Foundation 2012) of the gross domestic product (GDP), ranking it as the largest per-capita spender on healthcare in the world (OECD 2012). Chronic diseases accounted for approximately 75% of the healthcare expenditure (The Henry J. Kaiser Family Foundation 2012).

The HIA Process

In 2011, the National Research Council published a framework for HIA practice, consisting of 6 steps: screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation. Most HIAs completed before the NRC published this framework are organized similarly, though many lack a complete evaluation of the associated impacts (Dannenberg et al. 2008; Dannenberg et al. 2011). During the *screening stage*, the project team identifies a proposed policy, project, plan, or program and determines whether decision-making and community health would benefit from an HIA. In the *scoping stage*, the team identifies the affected population, health determinants, and the methodology to be used to complete the HIA. Health determinants are factors in a population's environment that contribute to the state of health (World

Health Organization 2012) and may include community safety and air quality, among others.

In the *assessment* stage, the team assesses the baseline health and socioeconomic status of the population, and identifies health disparities and vulnerable populations. It then determines the potential impacts of the proposed endeavor, by employing qualitative and/or quantitative methods. Qualitative techniques include literature reviews and stakeholder interviews. Quantitative methods may be used to estimate changes in the magnitude of health determinants and/or health outcomes. With the results from the assessment stage, the team formulates a series of *recommendations* aimed at maximizing health benefits. During the *reporting stage*, the team presents the results and recommendations from the HIA to stakeholders, decision-makers, and the public, after which it observes the impacts of the HIA and determines areas for improvement as part of the *monitoring and evaluation stage* (National Research Council 2011).

Previous Studies

Though HIA has been used in the U.S. since 1999, there is incomplete information about its impacts (Dannenberg et al. 2008; Dannenberg et al. 2011). In Europe, there are several studies that document, and even categorize, the impacts of HIAs, in addition to many resources available to aid in evaluation of HIA impacts (Wismar et al. 2007; Parry & Kemm 2005; York Health Economics Consortium 2006; Pursell & Kearns 2012; Research 2003). In the U.S., there have only been two major studies that have attempted to document the impacts of HIAs on decision-making and on the affected populations (Dannenberg et al. 2008; Dannenberg et al. 2011). However,

impacts for only 38 of the 53 HIAs in the studies were reported because the outcomes of the remaining HIAs were either pending or unknown by the HIA authors. This leaves a majority of completed HIAs without any published follow-up materials. Of the HIAs with reported impacts, 31 had positive effects on the decision-making process, though the extent of these effects varied.

As noted in the Introduction, a 2011 study assessed the extent to which U.S. HIAs have provided quantitative estimates of health impacts and found 12 HIAs that characterized changes in population disease burden as a result of a policy, plan, program, or project (Bhatia & Seto 2011). However, this latter review did not assess the effects of the HIAs on the resulting decisions.

Purpose of this study

The purpose of this research is to determine the effectiveness of HIAs completed in the United States, and whether they have had an impact on decision-making. Additionally, this research will establish the extent to which quantitative estimates of health outcomes have been calculated and used as evidence in support of HIA recommendations.

The term ‘impact’ in this report will not refer exclusively to whether an HIA effects change on the decision-making process. There are many different types of impacts an HIA may have, from raising awareness of health among the community and decision-makers, to forming relationships between seemingly unrelated sectors, such as the department of health and town planning department. Quantitative estimates of health will be defined as predictions of the magnitude of illness, disease, or death that will be caused

or prevented by the decision in question. These estimates are calculated using mathematical models (similar to those used in quantitative health risk assessment) to supplement qualitative research in the assessment stage.

METHODOLOGY

Fifty-four HIAs were found using the Health Impact Project and Human Impact Partners websites, representing HIAs completed after 2007. HIAs reviewed in Dannenberg et al.'s previous studies were not included because these studies had already investigated the impacts of the HIAs. The Health Impact Project is a "collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts" and works to provide technical and financial support to HIA practitioners across the country. Its aim is to increase the use of HIA in the decision-making process (Health Impact Project 2011). In order to promote the use of HIA, the Health Impact Project provides an extensive collection of HIAs completed in the U.S. to its website visitors. The collection of HIAs incorporates many American HIAs, which is why this website was chosen as an HIA search tool. Human Impact Partners, based in California, provides technical assistance to HIA practitioners, and has completed many HIAs itself. Its goal is to "transform the policies and places people need to live healthy lives" (Human Impact Partners n.d.). Human Impact Partners' website was chosen because at the time the search began, some of its HIAs were not yet available on the Health Impact Projects website.

For each of the HIAs, a summary table was completed and key information from each of the 6 stages (screening, scoping, assessment, recommendations, reporting, monitoring and evaluation) was extracted. Key information included:

- General HIA information (name, work group, location, year)

- Timeframe
- Whether the HIA was incorporated into an EIA or other assessment
- The proposed policy, plan, program or project assessed
- Methods
- Health determinants affected by the decision
- The population affected, health disparities identified, and qualitative estimates of health
- The baseline health and socio-demographic profile of those impacted
- How the HIA conveyed uncertainty
- Recommendations to the decision-makers and stakeholders
- The impact of the HIA on subsequent decisions and/or affected populations
- The cost and funding source for the HIA
- Quantitative health risk assessment results
- Limitations of the study
- Whether the HIA was peer reviewed

If information was not found in the report, a web search was conducted. Additionally, HIA authors for whom contact information was available were contacted via email or phone for the remaining information. Upon completion of the summary tables, authors were asked to verify them as part of a survey that was administered to them.

The impact of each HIA on subsequent decisions was categorized using an adaptation of a classification system developed by Wismar et al. for use in evaluating European HIAs (Wismar et al. 2007). The following categories were used: direct

effectiveness, general effectiveness, indirect effectiveness, opportunistic effectiveness, instructive effectiveness, impact unclear, results pending, or impact not reported. Table 1 provides definitions of each of these impact categories.

Wismar’s classifications system included a “no effectiveness” category, a classification that was replaced by “instructive effectiveness” for this study. “Instructive effectiveness” is considered to be more appropriate because though an HIA may not have an impact on the decision, it may still produce an impact by providing staff members with HIA training and experience, which can be used to develop more effective HIAs in the future.

After completion of the summary tables, a survey was developed and administered to the authors for whom contact information was available. The survey was administered via email using Qualtrics, an online survey software program. The survey

Term	Definition
<i>Direct Effectiveness</i>	The HIA resulted in modifications to the policy, plan, program or project
<i>General Effectiveness</i>	The HIA results were considered by decision-makers, but the policy, plan, program, or project was not modified
<i>Indirect Effectiveness</i>	The HIA process increased awareness among decision-makers of the potential health impacts of the policy, plan, program, or project, but the HIA was not considered in the decision-making process
<i>Opportunistic Effectiveness</i>	The HIA was conducted because it was expected to support the policy, plan, program, or project, and modifications to the proposed policy, plan, program, or project reflect this
<i>Instructive Effectiveness</i>	The HIA was not considered by decision-makers, and so had no effect on the outcome of the policy, plan, program, or project or on awareness among decision-makers of the potential health impacts of their choices. However, project members received HIA training and experience, which can be used for future HIAs. Additionally, relationships between different sectors, such as the health department and the town planning department, may have been developed
<i>Impact Unclear</i>	Modifications to the policy, plan, program, or project were made, but it is unclear whether this resulted from the HIA
<i>Results Pending</i>	The final decision has not yet been made by decision-makers
<i>Impact Not Reported</i>	The impact was not reported by the contacted HIA author; the HIA author was not identified, and therefore not contacted

Table 1: Impact classifications SOURCE: adapted from Wismar et al., 2007

questions may be found in Appendix A. A total of 34 HIA practitioners were contacted, representing 50 of the 54 HIAs studied. Twenty-four HIA practitioners completed the survey, providing information for 24 of the 50 HIAs.

Survey respondents answered two questions that allowed us to gauge their opinions on whether quantitative health risk assessment is useful in an HIA. Specifically, respondents were asked to express their level of agreement on a 1-5 scale (with 1 representing strong disagreement and 5 representing strong agreement) with the following two statements:

1. “Including quantitative health risk information in an HIA makes decision-makers more likely to view the HIA as credible.”
2. “The HIAs I have conducted would have been more useful if we could have estimated the number of deaths, illnesses, or other health conditions associated with the alternatives we were evaluating.”

For the second statement, an additional response was included: “The HIA(s) I conducted did include estimations of the number of deaths, illnesses or other health conditions associated with the alternatives we were evaluating.” Responses of those whose HIAs had included such quantitative information were excluded from the analysis, in order to focus on HIA practitioners who did not have the opportunity to include quantitative health risk assessments in their HIAs, leaving a survey sample of 20. For the analysis, we developed a combined score indicating respondent support for quantitative HIA by adding each respondent’s results on these two questions.

Practitioners were also asked what they believed prevented the use of quantitative health risk assessment, and whether they would be willing to learn quantitative health risk

analysis techniques. Additionally, the survey results provided information about the educational background of the respondents, as well as the number of HIAs that they had been involved with.

RESULTS

This section begins with an overview of the 54 HIAs analyzed for this research, as well as a summary of the characteristics of the survey participants. Then, it describes the impacts of the reviewed HIAs, the extent to which the HIAs used quantitative health risk assessment, and the opinions of HIA practitioners regarding quantitative health risk assessment. The section ends by describing the limitations encountered by the HIA practitioners, as documented in the HIA reports, through interviews with HIA practitioners, and in the survey.

Almost half of the HIAs reviewed for this paper are related to the built environment and transportation, providing assessments of zoning and growth plans for towns and cities, as well as plans to develop pedestrian and cyclist infrastructure. Ten HIAs analyzed health impacts associated with labor and employment policies, such as gender pay inequities. Several natural resources and energy projects were assessed, including mining projects in Alaska and wind farms in Oregon. Additionally, HIAs were used to examine plans, projects, policies, and programs associated with agriculture and food, transportation, housing, climate change, economic policies, education, and gambling. Figure 3 presents the distribution of the studied HIAs across the various sectors covered. The distribution of these HIAs is similar to the distribution of all HIAs completed in the U.S., as shown by Figure 2. Thirty-three percent of the HIAs were conducted by local government agencies, 20.4% by consulting agencies, 19.1% by

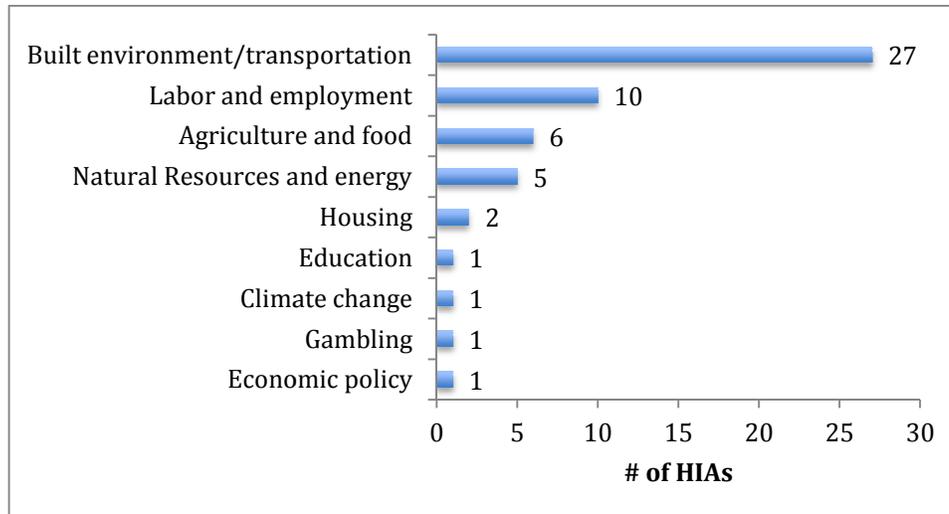


Figure 3: Distribution of the 54 reviewed HIAs across multiple sectors

universities, 17.6% by independent health advocates, 5.6% by state government agencies, and 4.3% by advocacy groups. Appendix B provides a summary table for each of the 54 HIAs included in this analysis.

Of the 34 practitioners surveyed, twenty-four practitioners, or 70.6%, responded. Appendix C presents detailed survey results. Fifty percent of HIA practitioners who responded to the survey had been involved with more than one HIA. Most of the survey respondents had high levels of education, with 75% holding a graduate or professional degree and 67% having degrees in a field related to public health or urban planning (table 2).

Impacts of HIA

We classified the impacts of the 54 HIAs according to the categories defined in Table 1 (direct effectiveness, general effectiveness, opportunistic effectiveness, instructive effectiveness, impact unclear, results pending, and impact unknown). We were able to obtain information for 43 of the 54 HIAs from either the report, the author, or

Characteristic	N	% of respondents
Gender		
Male	7	29.17
Female	17	70.83
Highest level of education		
Some college	1	4.17
College graduate	5	20.83
M.S.	9	37.50
Ph.D.	4	16.67
M.D.	1	4.17
Ph.D.-M.D.	1	4.17
J.D.	1	4.17
Other professional degree	2	8.33
Number of HIAs involved in		
1	12	50.00
2	3	12.50
3	4	16.67
4	2	8.33
5	1	4.17
6 to 10	1	4.17
11 or more	1	4.17

Table 2: Characteristics of survey respondents

publicly available documentation. The outcomes of each of these HIAs grouped by sector are shown in Figure 4. The impacts for the remaining 11 HIAs were unavailable either because the author could not be contacted, the author was unsure of the impact, or the author declined to discuss the HIA.

A total of 17 HIAs, or 32%, demonstrated direct effectiveness, resulting in the implementation of recommendations to change the intended decision. HIAs relating to the built environment and transportation had the greatest percentage of assessments resulting in direct

effectiveness, at 58% (figure 4). Seven HIAs (13%) achieved general effectiveness—the HIA results were considered by decision makers, but ultimately the decision was unaffected by HIA recommendations. Four HIAs (7.5%) resulted in instructive effectiveness, providing the HIA practitioners with experience in this field. These four HIAs spanned the gambling, housing, agriculture and food, and built environment and transportation sectors. The impacts of four HIAs were classified as unclear—a causative relationship could not be established between the HIA reports and the changes made to

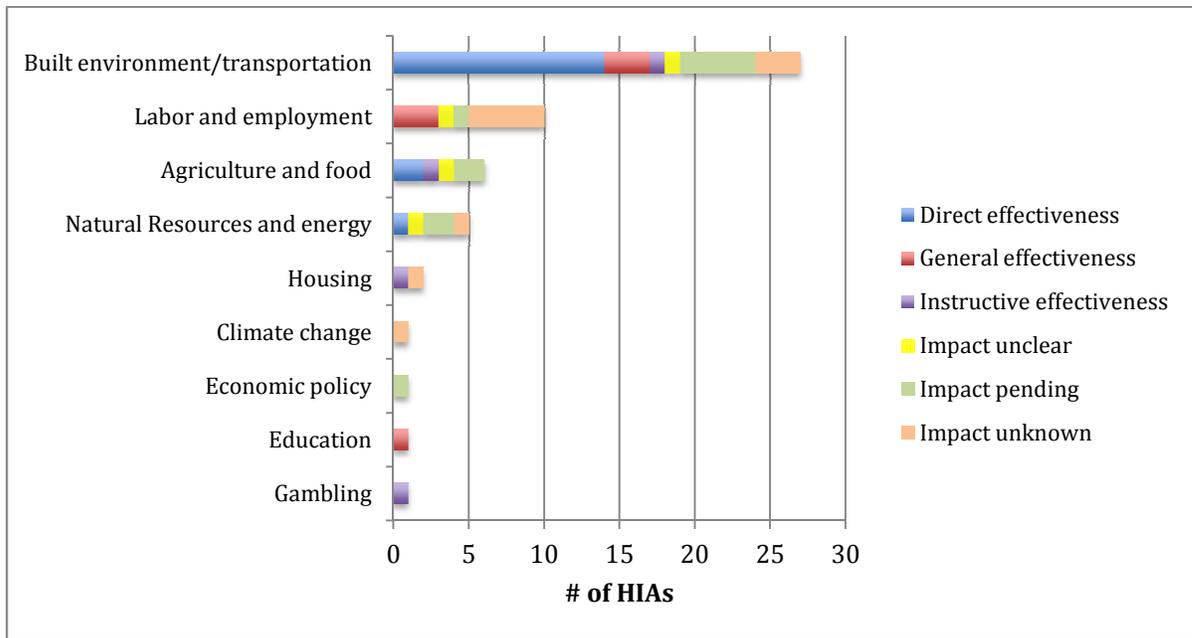


Figure 4: Impact classifications for each of the studied HIAs, further categorized by sector

their targeted decisions. HIAs from the built environment and transportation, natural resources and energy, agriculture and food, and labor and employment sectors were included in this impact classification. The authors of eleven HIAs (20.4%) identified their reports as having pending impacts. None of the HIAs were classified as having opportunistic effectiveness.

Survey respondents were asked how they believed decision-makers' interest in HIA findings could be increased. Common responses included:

- increased publicity,
- increased data availability to allow for quantitative analysis and to make the evidence used in the HIA more credible, and
- the development of relationships with stakeholders and decision-makers from the start of the HIA.

Some respondents suggested that the HIA process itself did not need to change but rather that decision-makers needed stronger incentives to consider health as an integral part of decision-making.

Quantitative Health Risk Assessment

Nine HIAs presented quantitative estimates of health impacts, but only four HIAs specifically estimated the number of illnesses or deaths that could be caused or avoided by the different choices under consideration. Table 3 presents the quantitative health estimates for these four HIAs. Of the nine HIA practitioners who provided quantitative estimates, four participated in the survey. Two of the four HIA practitioners who provided estimates of health outcomes participated in the survey. In other words, 16.7% of survey respondents were quantitatively inclined. To reduce bias, their responses were removed from the analysis of survey results pertaining to two statements regarding the use of quantitative health risk assessment (as discussed in the Methodology). Cronbach's alpha for the two statements was 0.86, providing strong evidence that there is strong internal consistency among the statements (Bland & Altman 1997). On the combined scale, the possible values ranged from 2 (strong disagreement) to 10 (strong agreement). The results show that survey respondents generally agreed that quantitative health risk assessment can strengthen the potential usefulness of an HIA. The mean response was 7.9 (standard deviation = 1.9). A one-sample t-test showed that the mean response was significantly above the scale mid-point of 6.0 ($t=4.43$, $p<0.001$, $n= 20$). A score above the scale mid-point of 6 suggests that the respondent believes quantitative health risk assessment can add value to HIA.

Table 3: HIAs that presented quantitative estimates of health outcomes

HIA	Methods	Summarized Quantitative Results
<i>Gambling on the Health of the Public: A Rapid Health Impact Assessment for an Urban Casino</i> ; Jonathan Purtle, MPH, MSc, Drexel University; Philadelphia, PA; 2010	Reviewed demographic data for Philadelphia to determine existence of health equity issues, and applied estimates from reviewed literature to the study area.	Secondhand smoke-induced heart disease and lung cancer will cause an estimated 6 PA casino workers' deaths/year/10,000 at risk. Visitors to the SugarHouse casino will cause 3 additional ambulance to hospital trips per week. Problem gamblers associated with the SugarHouse Casino will cause an estimated annual health/human service cost of \$15,503,136, where as pathological gamblers will cause \$20,825,604.
<i>Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic</i> ; Los Angeles County Department of Public Health; Los Angeles, CA; 2008	Quantified obesity by analyzing data on population weight gain and data regarding fast food and restaurant patronage. To quantify the impact of menu labeling, the authors analyzed data on meal prices, restaurant revenue and restaurant market shares. More detailed information is presented in the HIA report.	Among children, the average annual population weight gain associated with obesity was 6.75 million pounds. If menu labeling resulting in 10% of large chain restaurant patrons ordering reduced calorie meals with an average reduction of 100 calories per meal, a total of 38.9% of the 6.75 million pound average annual weight gain in the county population of children would be averted. If there were further increases in either the percentage of patrons ordering reduced calorie meals or in the average per meal calorie reduction, there would be a net population weight loss (>100% population weight gain averted), which suggests a potential reversal of the obesity epidemic.
<i>Healthy T for a Healthy Region: Health Impact Assessment of Proposed MBTA Service Cuts and Fare Increases</i> ; Metropolitan Area Planning Council; MA; 2012	Used the Central Transportation Planning Staff's Impact Analysis for some estimates of vehicle use and air quality for each scenario. Used these estimates in conjunction with information from scientific literature and expert consultation to estimate additional health outcomes.	Scenario 1 (increasing transit fares by 43%) would result in 0.18 additional deaths and 0.17 additional hospitalizations per year as a result of exposure to air pollution. 30,400 people would shift from transit to driving, resulting in 70 new cases of obesity per year, 9 additional deaths per year due to decreased physical activity, and \$75 million in lives lost per year due to decreased physical activity. There would be 0.79 new deaths due to automobile crashes per year, resulting in \$33.6 million increased costs per year. Scenario 2 (increasing transit fares by 35%) would result in 0.26 additional deaths and 0.24 additional hospitalizations per year due to air pollution exposure. 48,600 people would shift from transit to driving, resulting in 120 new cases of obesity per year, 14 additional deaths per year due to decreased physical activity, and \$116 million in lives lost per year due to decreased physical activity. There would be 1.15 new deaths due to automobile crashes, resulting in \$48.8 million in increased costs per year.
<i>Pathways to Community Health: Evaluating the Healthfulness of Affordable Housing Opportunity Sites along the San Pablo Avenue Corridor Using Health Impact Assessment</i> ; Human Impact Partners; El Cerrito and Richmond, CA; 2009	Air quality and noise exposure assessment, human health risk assessment: used traffic noise modeling and mapping of existing BART noise contours.	The pre-mature mortality per million population at any site is estimated to be 33-44, resulting from high traffic volumes (with heavy vehicles in the form of buses, medium trucks, and heavy trucks making up 3% of traffic). With traffic consisting of 25% heavy vehicles, the pre-mature mortality per million population would be 113-157.

Only two of the 20 practitioners without previous quantitative HIA experience expressed disagreement with the statement, and one neither agreed nor disagreed. The rest agreed or strongly agreed with both statements. Of the four HIA practitioners who had conducted quantitative assessments, three agreed or strongly agreed with the first statement (that quantitative information makes decision-makers more likely to view the HIA as credible), and the fourth neither agreed nor disagreed with the statement. In summary, a large majority of the surveyed HIA practitioners appear to believe that including quantitative health risk estimates in an HIA can increase the consideration of HIA results in decision-making.

Survey respondents were also asked about barriers to the use of quantitative health risk analysis. The most commonly noted barrier was the lack of secondary data, which was cited by 68% of respondents. Lack of time was cited by 55% of respondents, and lack of money and lack of experience were each cited by 45%. Additional responses included: (1) imprecision in the alternatives being considered and the evidence-base linking changes in the physical environment to health outcomes; (2) lack of direct connection with subject matter; and (3) a lack of common metrics that would allow for direct comparison of multiple impacts and outcomes.

Additionally, practitioners were asked how likely they would be to use training materials (either an on-line or in-person course or written materials) in order to carry out quantitative health risk analysis as part of an HIA. Thirty-six percent said they would be very likely to participate, 41% said they would be somewhat likely to participate, 23% said it was not very likely that they would participate, and 0% said they definitely would not participate.

Limitations in HIAs

The limitations for 72% of the 54 HIAs reviewed were reported as part of the survey, during interviews, and in HIA reports. Common limitations included lack of time during which to complete the assessment, limited funding, lack of expertise (both in HIA practice and in analytical skills), deficiencies in secondary data, and lack of resources. These limitations often resulted in the reduction of the scope of many assessments from what was originally intended.

Forty-six percent of the 54 reviewed HIAs were hindered by a lack of secondary data. The types of data available to the authors were not sufficient to link specific health outcomes to the impacts of the proposed policy, program, project, or plan. Eight authors noted that there was limited research, and therefore evidence, cited in the scientific literature that linked the health determinants listed in their scope to the proposed project, plan, program, or policy.

Authors cited time constraints for 35% of the 54 HIAs reviewed. Several HIAs conducted on proposed policies faced restrictive timeframes in an effort to finish the assessment before the policy was voted on. In these instances, the scope of the assessment was often drastically narrowed. The short time frames often prevent practitioners from addressing all of the potential health outcomes of interest. One author explained that the limited timeframe restricted the team's ability to collect primary data and use quantitative modeling techniques to predict health effects associated with the assessed plan (Buescher et al. 2011). Another HIA (conducted on a policy that would promote school gardens and the sale of locally grown food in school districts) was completed without interviewing perhaps the most important stakeholders, the children,

which was something the practitioners would have liked to have done but were unable to because the impending deadline would not allow time to circulate and collect permission slips (Henderson 2011a).

Twenty-five percent of survey respondents listed funding as a limitation. For 41 of the 54 HIAs reviewed, information about how the assessment was funded was available. Of the 41 HIAs with funding information, 85.4% received external funding. It should be noted that external funding was often not sufficient to cover all expenses--survey results indicate that 37.5% of HIAs were funded partially by external sources and partially by internal sources. 14.6% of the 41 HIAs with funding information received internal funding or in-kind support. Specific funding amounts were provided for 13 HIAs, with five HIA teams receiving over \$50,000. The average amount received by the practitioners was \$51,000. The largest external grant was for \$199,957, and the smallest external grant was for \$8,432. Grants came from a variety of sources, including federal government agencies (such as the CDC), state government agencies, and private agencies (such as the Robert Wood Johnson Foundation). Of the six HIAs for which information about the cost of the assessment was available, the average expenditure was \$72,500, with the least expensive HIA costing \$10,000, and the most expensive costing \$150,000.

DISCUSSION

This research was conducted to (1) determine the impacts of HIAs conducted in the United States on the decision-making process, (2) identify the extent to which U.S. HIAs employ quantitative health risk assessment to estimate health outcomes of different decision choices, and (3) assess whether HIA practitioners believe that increased inclusion of quantitative health risk estimates in HIAs would strengthen the potential impacts of HIAs on decision-making. Our results indicate that HIAs in the United States are having direct and indirect impacts on decisions made in a multitude of sectors and are increasing the attention given to health in decision-making. Though the use of quantitative health risk assessment to estimate health outcomes is uncommon, our findings suggest that HIA practitioners are enthusiastic about incorporating quantitative health risk estimates into HIAs.

As HIA use grows in the U.S., it is increasingly important to document the impacts of such assessments on the decision-making process. In doing so, it will become apparent whether decision-makers are using these reports and considering the corresponding recommendations when implementing proposed policies, projects, plans, or programs. Characterizing the magnitude of the impacts of HIAs on decision-making will enable practitioners to make comparisons between assessments, perhaps providing a way to determine how to design HIAs to maximize their potential to affect decisions.

Many HIAs completed in the U.S. have been considered by decision-makers. Though Dannenberg et al. did not classify the extent to which decisions were influenced by HIAs, his research indicates that decision-makers are receptive to HIA findings (Dannenberg et al. 2008; Dannenberg et al. 2011). Our research further supports this finding, and demonstrates that of those HIAs that are considered by decision-makers, more HIAs result in modifications to the proposed implementation than are only considered. This outcome is encouraging, as it suggests that decision-makers recognize the value of HIAs and may be influenced by their findings and recommendations. Our research suggests that including decision-makers in the HIA process increases the likelihood that the decision will be affected by the HIA.

The inclusion of quantitative estimates of health outcomes may also lead to increased interest in HIA results. Decision-makers may be more receptive to HIA recommendations if they are accompanied by estimates of disease or mortality. Unfortunately, the use of quantitative techniques for determining both health determinants and health outcomes in HIA is rare. Dannenberg et al. argues that the use of quantitative assessment in HIAs is not necessary, stating “residents at a public hearing who highlight the qualitative health benefits of a new playground for their children may carry more weight in a political decision than a precise estimate of how many children would use such a playground” (Dannenberg et al. 2008). This may be true if the quantitative estimates discussed are estimates of health determinants, but we would argue—as our survey results suggest—that including estimates of the number of deaths and/or illnesses that could be caused or prevented by each decision option is likely to lend the HIA greater weight in the decision-making process. Furthermore, when decision-makers must

consider cost differences among the choices they face, providing quantitative health information could provide the evidence needed to pursue a choice with higher direct costs because of its potential to reduce health costs.

Our research indicates that HIA practitioners believe that estimates of health outcomes would be valuable, yet the use of quantitative health risk assessment is rare in HIA. This may occur for a multitude of reasons. The most frequently quoted barrier to the use of quantitative health risk assessment is a lack of secondary data. However, it is unclear whether this perceived lack of secondary data is true, or whether HIA practitioners are unable to access such data. Additionally, time constraints, lack of funding, and expertise deficiencies prevent quantitative estimates of health outcomes. Time constraints and funding deficits are difficult to address, as HIAs for time-sensitive policies, projects, programs, or plans must be completed promptly in order to be useful, and external funding opportunities are often contingent upon the state of the economy. Quantitative health risk assessment expertise, however, can be developed through training programs, which could reduce the costs of future quantitative assessments. Future research should examine quantitative health risk assessment techniques and recommend tools appropriate for HIA. This, in addition to training programs and materials, will assist HIA practitioners in implementing quantitative estimation techniques.

This research was limited by several factors. Primarily, the study was limited by the number of HIA authors who agreed to provide additional information about their HIAs, as well as by the amount of information provided by participating authors. Information such as the impacts of the HIA, cost and funding source, and limitations of

the HIA were not often provided in the HIA report, so contacting HIA authors was often essential to access such information.

The classifications of HIA impacts on decision-making offer useful information regarding the effectiveness of HIA in the U.S. However, impacts could not be identified for all HIA reports. Future research should continue to document the impacts of current and pending HIAs on decision-making, and should eventually extend to document the impacts on health. Other HIA stakeholders should be surveyed in order to determine a clearer understanding of the impacts of HIAs.

A further limitation of this research is that it may not include all new U.S. HIAs. The databases used to locate HIAs were updated often, and we were unable to include additional HIAs once our analysis had begun. Another limitation of the study is that the survey was constrained to a small sample size. Increasing the sample size to include more U.S. HIA authors, in addition to HIA stakeholders and decision-makers, would have provided more weight to the survey results. However, this was beyond the scope of this research.

The projects, policies, programs, and plans for which HIAs have been conducted represent a very small fraction of decisions that could benefit from HIA. In its current practice, HIA is applied ad hoc to decisions that stakeholders or practitioners express interest in. It would be impractical for future applications of HIA to encompass all decisions, but certainly it should be used for decisions that have the greatest potential to affect public health (National Research Council 2011; Wernham 2011). Similarly, it would be unrealistic to apply quantitative techniques in all HIAs.

As decision-makers recognize the value of HIAs, the extent to which public health is considered by sectors outside of the traditional health arena will increase. Our research provides evidence that HIAs are affecting decisions in a variety of sectors and are elevating the attention given to health considerations. More widespread use of quantitative health risk estimates as part of HIAs could further increase the consideration of health impacts of alternative decisions.

APPENDIX A: SURVEY QUESTIONS

Q1 How many HIAs have you worked on or been involved with?

Q2 Do you feel that the technical resources available to assist you with the HIA process were sufficient? Examples of technical resources include HIA materials on the internet, HIA experts available for consultation, and HIA tool kits.

Yes (1)

No (2)

If Yes Is Selected, Then Skip To In your opinion, what was the most va...

Q3 How do you think available technical resources may be improved?

Q4 In your opinion, what was the most valuable source of information you used to learn the HIA process?

Q5 Was there sufficient financial support available for the HIA(s) you worked on?

	HIA was funded entirely by external sources (1)	HIA was funded partially by external sources and partially by internal sources (2)	HIA was funded entirely by internal sources (3)	HIA was not funded; HIA practitioners volunteered their time (4)	Other (5)
<code>{e://Field/HIA1}</code> (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA2 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA2}</code> (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA3 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA3}</code> (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA4 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA4}</code> (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA5 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA5}</code> (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA6 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA6}</code> (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA7 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA7}</code> (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If HIA8 Is Not Empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<code>{e://Field/HIA8}</code> (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If HIA9 Is Not Empty \${e://Field/HIA9} (9)	<input type="radio"/>				
If HIA10 Is Not Empty \${e://Field/HIA10} (10)	<input type="radio"/>				
If HIA11 Is Not Empty \${e://Field/HIA11} (11)	<input type="radio"/>				
If HIA12 Is Not Empty \${e://Field/HIA12} (12)	<input type="radio"/>				
If HIA13 Is Not Empty \${e://Field/HIA13} (13)	<input type="radio"/>				
If HIA14 Is Not Empty \${e://Field/HIA14} (14)	<input type="radio"/>				
If HIA15 Is Not Empty \${e://Field/HIA15} (15)	<input type="radio"/>				

Q6 If you chose other, please explain how the HIA was funded:

Q7 1. The following questions concern the type of information provided by an HIA. “Quantitative health risk analysis” means estimates of the number of illnesses, deaths, or other adverse health indicators associated with one of the decision alternatives considered in the HIA. For example, an HIA might estimate the number of cases of childhood obesity that would be prevented by building a new section of sidewalk.

a. Please indicate your level of agreement with the following statements:

Q8 i. “Including quantitative health risk information in an HIA makes decision-makers more likely to view the HIA as credible.”

- Strongly Disagree (1)
- Somewhat Disagree (2)
- Neither Agree nor Disagree (3)
- Somewhat Agree (4)
- Strongly Agree (5)

Q9 ii. “Including quantitative health risk information in the HIA has no effect on whether decision-makers view the HIA as credible.”

- Strongly Disagree (1)
- Somewhat Disagree (2)
- Neither Agree nor Disagree (3)
- Somewhat Agree (4)
- Strongly Agree (5)

Q10 iii. “The HIAs I have conducted would have been more useful if we could have estimated the number of deaths, illnesses, or other health conditions associated with the alternatives we were evaluating.”

- Strongly Disagree (1)
- Somewhat Disagree (2)
- Neither Agree nor Disagree (3)
- Somewhat Agree (4)
- Strongly Agree (5)
- The HIA(s) I conducted did include estimations of the number of deaths, illnesses or other health conditions associated with the alternatives we were evaluating (6)

Q11 The main barriers to using quantitative health risk analysis in HIAs are (check all that apply):

- Lack of time (1)
- Lack of money (2)
- Lack of technical expertise (3)
- Lack of secondary data (4)
- Other (please specify) (5) _____

Q12 If training materials (on-line or in-person courses or written materials) on how to carry out quantitative health risk analysis as part of an HIA were available, how likely is it that you would participate?

- Very likely (1)
- Somewhat likely (2)
- Not very likely (3)
- Definitely would not (4)

Q13 How can the HIA process be improved to increase decision-makers interest in and response to findings?

Q14 Wismar et al. developed a system for classifying HIAs. Based on this classification system, researchers at the University of North Carolina (UNC), Chapel Hill, have classified HIAs using the following categories:

- a. Direct effectiveness: The HIA resulted in modifications to the policy, plan, program or project.
- b. General effectiveness: The HIA results were considered by decision makers, but the policy, plan, program or project was not modified.
- c. Indirect effectiveness: The HIA process increased awareness among decision-makers of the potential health impacts of the policy, plan, program, or project, but the HIA was not considered in the decision-making process.
- d. Opportunistic effectiveness: The HIA was conducted because it was expected to support the policy, plan, program or project, and modifications to the proposed policy, plan, program or project reflect this.
- e. Instructive effectiveness: The HIA was not considered by decision makers, and so had no effect on the outcome of the policy, plan, program or project or on awareness among decision-makers of the potential health impacts of their choices. However, project members received HIA training and experience, which can be used for future HIAs. Additionally, relationships between different sectors, such as the health department and the town-planning department, may have been developed.
- f. Impact unclear: modifications to the policy, plan, program or project were made, but it is unclear whether this resulted from the HIA.
- g. Results pending.
- h. Impact not reported.

Wisnar, M., Blau, J., Ernst, K., & Figueras, J. (2007). The Effectiveness of Health Impact Assessment: Scope and Limitations of Supporting Decision-Making in Europe. (M. Wisnar, J. Blau, K. Ernst, & J. Figueras, Eds.) The International Journal of Health Planning and Management (Vol. 24, p. 291). World Health Organization.

Q15 A UNC research team has classified your HIA(s) in the following manner. Do you believe this is correct?

	Yes (1)	No (2)
\${e://Field/HIA1}: \${e://Field/HIAclass1} (1) If HIA2 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA2}: \${e://Field/HIAclass2} (2) If HIA3 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA3}: \${e://Field/HIAclass3} (3) If HIA4 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA4}: \${e://Field/HIAclass4} (4) If HIA5 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA5}: \${e://Field/HIAclass5} (5) If HIA6 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA6}: \${e://Field/HIAclass6} (6) If HIA7 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA7}: \${e://Field/HIAclass7} (7) If HIA8 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA8}: \${e://Field/HIAclass8} (8) If HIA9 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA9}: \${e://Field/HIAclass9} (9) If HIA10 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA10}: \${e://Field/HIAclass10} (10) If HIA11 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA11}: \${e://Field/HIAclass11} (16) If HIA12 Is Not Empty	<input type="radio"/>	<input type="radio"/>
\${e://Field/HIA12}:	<input type="radio"/>	<input type="radio"/>

\${e://Field/HIAclass12} (17) If HIA13 Is Not Empty \${e://Field/HIA13}: \${e://Field/HIAclass13} (18) If HIA14 Is Not Empty \${e://Field/HIA14}: \${e://Field/HIAclass14} (19) If HIA15 Is Not Empty \${e://Field/HIA15}: \${e://Field/HIAclass15} (13)	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>
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Q34 How would you classify the effects of the HIA?

Q35 Please explain:

Q17 Please review the following summary table(s) for the HIA(s) you have completed and indicate whether any corrections are needed.

	Corrections needed (1)	No corrections needed (2)
General Information (name, work group, location, year): \${e://Field/HIAinfo1} (1)	<input type="radio"/>	<input type="radio"/>
Timeframe: \${e://Field/Timeframe1} (2)	<input type="radio"/>	<input type="radio"/>
Incorporated into EIA/other assessment?\${e://Field/incorpEIA1} (3)	<input type="radio"/>	<input type="radio"/>
Proposed policy, plan, program or project:\${e://Field/proppol1} (4)	<input type="radio"/>	<input type="radio"/>
Methods:\${e://Field/methods1} (5)	<input type="radio"/>	<input type="radio"/>
Scoping: Health determinants affected by the decision: \${e://Field/scoping1} (6)	<input type="radio"/>	<input type="radio"/>
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts:\${e://Field/assessment1} (7)	<input type="radio"/>	<input type="radio"/>
Baseline health and socio-demographic profile of those impacted:\${e://Field/basehealth1} (8)	<input type="radio"/>	<input type="radio"/>
How does the HIA convey uncertainty?\${e://Field/conveyuncer1} (9)	<input type="radio"/>	<input type="radio"/>
Recommendations to decision-makers and stakeholders:\${e://Field/recs1} (10)	<input type="radio"/>	<input type="radio"/>
Impact of HIA on subsequent decisions and/or affected populations:\${e://Field/HIAimpact1} (11)	<input type="radio"/>	<input type="radio"/>
Cost and Funding Source for HIA:\${e://Field/costfund1} (12)	<input type="radio"/>	<input type="radio"/>
Quantitative Results:\${e://Field/quantresults1} (13)	<input type="radio"/>	<input type="radio"/>
Limitations:\${e://Field/limitations1} (14)	<input type="radio"/>	<input type="radio"/>
Peer Reviewed?\${e://Field/peerreview1} (15)	<input type="radio"/>	<input type="radio"/>

Q18 Please list any corrections:

Q27 Please indicate your highest level of education:

- Less than high school/GED (1)
- High school graduate/GED (2)
- Some college (3)
- Associates degree (4)
- College graduate (5)
- Master's degree (6)
- Ph.D. (7)
- M.D. (8)
- M.D.-Ph.D. (9)
- J.D. (10)
- Other professional degree (please specify) (11) _____

If Less than high school/GED Is Selected, Then Skip To End of Survey
If High school graduate/GED Is Selected, Then Skip To End of Survey
If Some college Is Selected, Then Skip To End of Survey
If J.D. Is Selected, Then Skip To End of Survey

Answer If Please indicate your highest level of education: Associates degree Is Selected Or Please indicate your highest level of education: College graduate Is Selected Or Please indicate your highest level of education: Master's degree Is Selected Or Please indicate your highest level of education: Ph.D. Is Selected Or Please indicate your highest level of education: M.D. Is Selected Or Please indicate your highest level of education: M.D.-Ph.D. Is Selected

Q28 Please indicate the areas of study for the higher degree(s) you have earned:

If Please indicate your highest level of education: Associates degree Is Selected

- Associates Degree (1) _____

If Please indicate your highest level of education: Master's degree Is Selected Or Please indicate your highest level of education: Ph.D. Is Selected Or Please indicate your highest level of education: M.D.-Ph.D. Is Selected Or Please indicate your highest level of education: J.D. Is Selected Or Please indicate your highest level of education: Other professional degree (please specify) Is Selected Or Please indicate your highest level of education: College graduate Is Selected

- College: (2) _____

If Please indicate your highest level of education: Master's degree Is Selected Or Please indicate your highest level of education: Ph.D. Is Selected Or Please indicate your highest level of education: M.D. Is Selected Or Please indicate your highest level of education: M.D.-Ph.D. Is Selected Or Please indicate your highest level of education: J.D. Is Selected Or Please

indicate your highest level of education: Other professional degree (please specify) Is Selected

Master's: (3) _____

If Please indicate your highest level of education: Ph.D. Is Selected

Ph.D.: (4) _____

If Please indicate your highest level of education: M.D.-Ph.D. Is Selected

M.D.-Ph.D: (5) _____

General HIA Information (name, work group, location, year)	<i>Community Health Assessment: Bernal Heights Preschool</i> ; San Francisco Department of Public Health; Bernal Heights, CA; 2008 (San Francisco Department of Public Health (SFPDH) 2008)
Timeframe	2 years
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Project to relocate preschool to one of three proposed locations: flattop location, Paul Revere Elementary School, or the library
Methods	Applied the Healthy Development Measurement Tool
Scoping: Health determinants affected by the decision	Childcare; housing; education; transportation; parks, recreation and open space; access to goods and services; environmental conditions (air quality/noise); Bernal heights demographics and racial/ethnic diversity
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Population of Bernal Heights Disparities: Low income families of Latino, Filipino, Middle Eastern, African American and Asian descent. Quantitative: Flattop location will not significantly reduce commute time, but it is half a block away from the "community hub". The Paul Revere Elementary School is 3.5 blocks away from the "community hub," whereas the library is located within the "community hub". Relocating the preschool to Paul Revere Elementary School might lead to parents enrolling their children at that elementary school, rather than exploring alternative schools. The Paul Revere Elementary School site would decrease commute time for some parents, but might reduce the likelihood of social interactions because of its distance from the "community hub". The library and the Paul Revere school are more than 500ft away from a busy roadway
Baseline health and socio-demographic profile of those impacted	10,377 persons under the age of 13. There is about one childcare spot available for every 4 youth. The primary eligibility criterion for childcare subsidies is income of the family/household. 14% of Bernal Heights households live in overcrowded conditions. About 25% of all K-12 students who reside in San Francisco attend private school. White children are underrepresented in the San Francisco Unified School District and Black, Asian, Pacific Islander and Filipino overrepresented. 59% of Bernal Heights households are within 1/2 mile of full-service grocery store/supermarket. 24% are within 1/4 mile of a community garden. 28% of Bernal Households are within a 1/2-mile of a farmers' market. 100% of households are within 1/2 mile of a community-shared agriculture drop off site. The Bernal Heights per capita income is \$27,521. The unemployment rate is 4%, with 11% of the population below the poverty line
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Relocate the preschool to the lower flattop area of the playground
Impact of HIA on subsequent decisions and/or affected populations	No impact on the decision
Cost and Funding Source for HIA	No funding
Quantitative Results	None
Limitations of method	Data available only allowed for inter-neighborhood (not intra-neighborhood) comparisons. Lack of funding, time and resources prevented door-to-door surveys and the collection of more specific neighborhood data
Peer Reviewed	Yes

Table B.1: Community Health Assessment: Bernal Heights Preschool

General HIA Information (name, work group, location, year)	<i>City of Ramsey: Health Impact Assessment</i> ; the City of Ramsey; Ramsey, MN; 2008 (Ramsey City Council 2008)
Timeframe	1 year
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Current planning practice in Ramsey
Methods	Threshold Analysis method developed by Design for Health; Literature review
Scoping: Health determinants affected by the decision	Accessibility (to transportation, stores, urban services, sidewalks/trails); air quality; environment and housing quality; food; mental health; physical activity; safety; social capital; water quality
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The residents of the city of Ramsey. Disparities: None Qualitative: Out of a total of 100 points, Ramsey scored 32 points on the Threshold Analysis. Air quality(12), environmental and housing quality (7), mental health(7), safety (4) and social capital(2) had the best scores. Accessibility to transit (0), retailers/supermarkets (0), urban services (0) and sidewalks/trails (0) scored lowest
Baseline health and socio-demographic profile of those impacted	23.6% of Ramsey residents live within a 400m buffer of an active park and 35.2% of residents live within a 600m buffer of an active park. 40.3% of residents live within a 400m buffer of a current trail or sidewalk and 49.3% live within a 600m buffer. About 20% of the streets in Ramsey have sidewalks or trails
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Public parks and schools should not be built within 500m of Highway 10; implement a tree-planting policy; continued use of the Building Code; increase accessibility to fresh fruits and vegetables; increase and improve park space; adopt a "Complete Streets" ordinance/policy; create affordable housing
Impact of HIA on subsequent decisions and/or affected populations	Ramsey plans to: improve public rail transportation through the Comprehensive Plan Update; mitigate the negative impacts of decreased air quality near major roads by preserving its existing tree canopy near Highway 10 and will attempt to plant more trees around Highway 10; provide tree canopy along more than 50% of street centerline. Once the city is fully developed, at least 50% of the population will live within a 600m walking buffer of an active park space and trail. The city will provide streetlights at least 300ft intervals along sidewalks and roads. Ramsey aims to provide a mixture of housing types and tenants, and maintain at least 50% of housing in the city at a level affordable to households earning 100% of the area median income. Ramsey will aim to provide urban services (sewer and water) in an equitable and phased manner. Ramsey will also acquire areas for parks that include surface water bodies through the Comprehensive Plan and Parks and Trails Master Plan. Ramsey hopes to: implement policies that will ensure 50% of all residential units in the city are within 1,600m of a supermarket/fruit and vegetable shop; add green space through the Park Trust Fund, the trail development fund, the construction of park and trail facilities, and normal landscaping
Cost and Funding Source for HIA	\$35,000 through Prevention Minnesota administered by Blue Cross/Blue Shield of Minnesota.
Quantitative Results	None
Limitations of method	It is difficult for a suburb to score well with the Threshold Analysis method because of the pattern of development focused on open spaces, low density, and auto dependence. Several of the indicators are lacking clear goals for which to strive. Some of the indicators may be at odds with other important planning goals
Peer Reviewed	No

Table B.2: City of Ramsey: Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Gambling on the Health of the Public: A Rapid Health Impact Assessment for an Urban Casino</i> ; Jonathan Purtle, MPH, MSc, Drexel University; Philadelphia, PA; 2010 (Purtle 2010)
Timeframe	Approximately 240 hours
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Project to build a slot casino in a residential area of Philadelphia
Methods	Rapid HIA: Conducted a literature review using ISI Web of Knowledge, LexisNexis Academic, PubMed and Web-based searches for "casino impact" and "casino" + "impact". Utilized PubMed to search for causal pathways to proximal and distal health impacts. Reviewed demographic data for Philadelphia to determine existence of health equity issues
Scoping: Health determinants affected by the decision	Employment; traffic congestion; physical activity; problem gambling; public health services
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Philadelphia, employees at SugarHouse Casino, visitors to the casino Disparities: those living in disadvantaged neighborhoods are more likely to develop problem gambling Qualitative: The presence of SugarHouse Casino will have minimal impact on public health spending and improvements in population health
Baseline health and socio-demographic profile of those impacted	The population immediately surrounding the casino is comprised of approximately 75% non-Hispanic whites and 25% African Americans
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Conduct a full HIA
Impact of HIA on subsequent decisions and/or affected populations	No impact
Cost and Funding Source for HIA	No funding
Quantitative Results	Visitors to the SugarHouse casino will cause 3 additional ambulance trips to hospitals per week. Problem gamblers associated with the SugarHouse Casino will cause an estimated annual health/human service cost of \$15,503,136, whereas pathological gamblers will cause \$20,825,604, for a total of \$36,328,470. Projected annual city tax revenue: \$17.5 million. The estimated new pathological and problem gamblers in Philadelphia over the age of 21, will be 29,844. Projected annual state tax revenue: \$223 million
Limitations of method	Limited time, lack of quality data/research for many of the associations of interest
Peer Reviewed	No

Table B.3: Gambling on the Health of the Public: A Rapid Health Impact Assessment for an Urban Casino

General HIA Information (name, work group, location, year)	<i>Healthy Tumalo Community Plan</i> ; Deschutes County HIA Workgroup; Tumalo, OR; 2010 (Madrigal et al. 2010)
Timeframe	6 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Tumalo Community Plan
Methods	Literature review; Community engagement through the formation of an advisory council, and listening sessions
Scoping: Health determinants affected by the decision	Frequency and quality of physical activity; traffic safety; rural livability
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Tumalo residents. Disparities: rural residents (obesity), school-age children (obesity). Qualitative: Measures such as grade-separated crossings across US Highway 20 would improve public safety, create greater access to destinations within and just outside the community, and increase physical activity and local economic sustainability. The community at large supports the creation of infrastructure to formalize recreation and capture commercial business to prevent risks posed by parking, crowding and congestion along rural roads, vandalism, littering, and public trespassing on private land and sensitive wetland areas
Baseline health and socio-demographic profile of those impacted	6,500 residents of Tumalo. 39.8% of Deschutes County adults and 21.2% of eighth graders are overweight. The leading causes of adult death in Deschutes County are cancer, heart disease and stroke; chronic conditions resulting largely from individual behavior choices and are primarily related to three behaviors: tobacco use, physical inactivity and poor nutrition
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Change the transportation goal listed in the TCP draft to "provide a safe and efficient system for cyclists, equestrians, pedestrians and motor vehicles to support local economic development, recreational uses, and community health"; change the Road and Sidewalk Policy #2 to provide for a 'complete streets' policy; change Policy #9 to support changes to the roadside environment that would reduce traffic speed; change Policy #11 to create grade separated crossings; change Policy #8- to preserve public access to the river; support school district in improving community use of Tumalo Community School facilities; support the development of a trails and recreation master plan; advocate for the expansion of the Bend Metro Park and Recreation District to include the Tumalo area
Impact of HIA on subsequent decisions and/or affected populations	Recommendations adopted by the planning commission and implemented in the 20 year Tumalo Community Plan. ODOT and community groups have partnered together on safety and traffic improvements
Cost and Funding Source for HIA	\$10,000 from the CDC and the Association of State and Territorial Health Officials through a grant administered by the Oregon Health Authority, Office of Environmental Public Health
Quantitative Results	None
Limitations of method	Limited budget and time, lack of experience
Peer Reviewed	No

Table B.4: Healthy Tumalo Community Plan

General HIA Information (name, work group, location, year)	<i>Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic</i> ; Los Angeles County Department of Public Health; Los Angeles, CA; 2008 (Kuo et al. 2009)
Timeframe	8 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Proposed policy for menu labeling (California's Senate Bill 120 (2007) and in the current Senate Bill 1420)
Methods	Modeling using published and unpublished data
Scoping: Health determinants affected by the decision	Obesity and related illnesses
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Adults and children (older than 5 years) in LA County Disparities: none Qualitative: none
Baseline health and socio-demographic profile of those impacted	In 2005 the percentage of adults in the county who were obese was 20.9%. 23% of children were obese in 2006
How does the HIA convey uncertainty	Conducted simulations using a range of estimates for the percentage of restaurant patrons who would order reduced calorie meals, in addition to the number of calories their intake would be reduced by, to assess variation in the results. Sensitivity analyses were performed for total annual restaurant revenue, large chain restaurant market share, and average meal price. Results showed that the findings are relatively insensitive to variation in the estimates of these variables. An error of +/- \$1 billion in the estimate of total annual restaurant revenue would yield a result for population weight gain averted within the range of 36.1%-41.6%. An error of up to +/-5% in the estimate of large chain restaurant market share would yield a result for the population weight gain averted ranging from 34.9%-42.8%. An error of up to +/--\$1.00 in the estimate of average meal price would yield a result for population weight gain averted ranging from 34.2% to 44.8%. The sensitivity analysis of all three variables combined gave a range of 28.5% to a 52.8% for the estimate of population weight gain averted
Recommendations to decision makers and stakeholders	Mandate menu labeling at fast food and other large chain restaurants; community education efforts, pricing incentives or other strategies to increase the degree to which restaurant patrons use the posted information to select reduced calorie meals
Impact of HIA on subsequent decisions and/or affected populations	HIA was found to be helpful and used by decision-makers in passing the state's menu labeling law
Cost and Funding Source for HIA	No funding received, used county-funded staff to complete the analysis. Cost was approximately \$60,000
Quantitative Results	Among children, the average annual population weight gain associated with obesity was 6.75 million pounds. If menu labeling resulting in 10% of large chain restaurant patrons ordering reduced calorie meals with an average reduction of 100 calories per meal, a total of 38.9% of the 6.75 million pound average annual weight gain in the county population of children would be averted. If reduced calorie meals were increased to 20%, 77.7% of the population weight gain would be averted over a year. If the average meal calorie reduction increased to 125 calories among the 20% of patrons, the population weight gain averted would reach 97.2%. If there were further increases in either the percentage of patrons ordering reduced calorie meals or in the average per meal calorie reduction, there would be a net population weight loss (>100% population weight gain averted), which suggests a potential reversal of the obesity epidemic
Limitations of method	Unable to assess the effect of menu labeling on the obesity epidemic directly; instead estimated its effect using population weight gain averted as an alternative measure. Analysis was limited by the lack of county-specific data on restaurant revenues, large chain restaurant market share and average meal price. Had limited data on the degree to which menu labeling would influence the menu item selections of restaurant patrons
Peer Reviewed	Yes

Table B.5: Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic

General HIA Information (name, work group, location, year)	<i>Yellowstone County/City of Billings Growth Policy: Health Impact Assessment</i> ; RiverStone Health Population Health Services; Yellowstone County/Billings, MT; 2008 (Staton et al. 2008)
Timeframe	5 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Yellowstone County/City of Billings 2008 Growth Policy
Methods	Retrospectively analyzed the 2003 Growth Policy, collected and analyzed existing data as well as new data, hosted and supported community meetings, identified key stakeholders and informants, and gathered and appraised information made available since the creation of the 2003 Growth Policy
Scoping: Health determinants affected by the decision	Mental health; unintentional injury; heart disease; physical activity; nutrition; emergency preparedness; pedestrian safety and traffic; social capital; safety and crime; affordable housing; living wage jobs
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population affected: Residents of Yellowstone County Health Disparities: Low-income and rural communities lack access to affordable and nutritious foods. Neighborhoods that have diverse functions, residential, commercial, institutional, and leisure, may be safer than single function areas. Adults aged 40 to 64 and adults living at lower income levels are less likely to meet the physical activity recommendations. Qualitative: the 2008 Growth Policy needs to take a more direct approach to health than the 2003 Growth Policy. The 2003 Growth Policy does nothing to identify issues, policies and strategies specific to improving the health of the community. The 2008 Growth Policy can serve as a means to address issues related to emergency preparedness, nutrition, pedestrian safety and traffic, physical activity, social capital, safety and crime, and affordable housing and living wage jobs
Baseline health and socio-demographic profile of those impacted	139,936 residents of Yellowstone County, 101,876 reside in Billings. 66.3% of Yellowstone County adults rate their overall mental health as "excellent" or "very good." 6.9% of Yellowstone County adults believe that their overall mental health is "fair" or "poor." 12.4% of Yellowstone County adults report that they have been diagnosed with major depression by a physician at some point in their lives. Low-income adults report a much higher prevalence of diagnosed major depression. 25.7% of Yellowstone County adults report that they have had two or more years in their lives when they felt depressed or sad on most days. Motor vehicle crashes account for nearly half of all accidental deaths in Yellowstone County. Between 2000 and 2002, the annual average age-adjusted unintentional injury death rate in Yellowstone County was 40.7 per 100,000 population. Between 2000 and 2002, the annual average age-adjusted motor vehicle accident death rate in Yellowstone County was 17.8 per 100,000 populations. 76.8% of Yellowstone County adults report "always" wearing a seat belt when driving or riding in an automobile. 89.3% of Yellowstone County parents of young children report that their child "always" wears an appropriate child restraint when riding an automobile. 36.2% of Yellowstone County parents of children aged 5 to 17 report that their child "always" wears a helmet when riding a bicycle. 4% of Yellowstone County adults report that they have been the victim of a violent crime in the area in the past 5 years. 3.2% of Yellowstone County adults acknowledge being the victim of domestic violence in the past 5 years. 5.1% of Yellowstone County adults report that they suffer from or have been diagnosed with heart disease. 3.3% of Yellowstone County adults report that they suffer from or have been diagnosed with cerebrovascular disease. 26.1% of Yellowstone County adults have been told at some point that their blood pressure was high. 28.5% of Yellowstone County adults have been told by a health professional that their cholesterol level was high. 89.1% of adults report having one or more cardiovascular risk factors. 26.3% of Yellowstone County adults report no leisure-time physical activity in the past month. 41.4% of adults participate in regular, sustained moderate or vigorous physical activity. 34.9% of adults report eating 5 or more servings of fruits and vegetables per day. 10% of adults reported eating 0 servings of dairy per day
How does the HIA convey uncertainty	N/A

Recommendations to decision makers and stakeholders	Create emergency preparedness plans and plan neighborhoods that foster disaster and evacuation routes; create ways to mitigate problems that could potentially pose vector-borne and rodent-associated health threats; strive to increase access to nutritious foods for residents in all neighborhoods; install traffic calming devices in residential neighborhoods; maintain routine upkeep of pedestrian walkways; create safe routes to school; create ways to make physical activity part of everyday living and a logical alternative to automobile transportation; promote the "Buses and Bikes" program; encourage community gathering places; encourage neighborhoods to give back to the community through activities such as annual cleanup day; amend Public Nuisance Ordinance to address the removal of boarded up and abandoned houses in neighborhoods; create large, open space play areas in parks; provide adequate street lighting; ensure adequate resources for public safety and crime prevention; encourage Neighborhood Watch programs; enable the development of affordable housing; attract businesses with a minimum average annual wage equal to the living wage index and improve marketing for employers to pay a living wage
Impact of HIA on subsequent decisions and/or affected populations	All recommendations were implemented with minor changes. Removed words such as "required" or "must" since the Growth Policy is not a regulatory document. HIA led to a strong relationship between the local health department and the local planning department. Health is now an area directly discussed and considered during the planning process
Cost and Funding Source for HIA	Grant from the Robert Wood Johnson Foundation for \$199,957
Quantitative Results	None
Limitations of method	Data availability and timeline for seeing the outcomes limits the evaluation component of the HIA
Peer Reviewed	No

Table B.6: Yellowstone County/City of Billings Growth Policy: Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of the Healthy Families Act of 2009</i> ; Human Impact Partners and San Francisco Department of Public Health; Oakland, CA, 2009 (Cook et al. 2009)
Timeframe	5 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policy to guarantee that workers receive at least 1 hour of paid sick time for every 30 hours worked (Healthy Families Act of 2009)
Methods	Developed logic frameworks, reviewed existing secondary data sources and empirical literature, conducted new analyses of data from the 2007 National Health Interview Survey, and hosted focus groups
Scoping: Health determinants affected by the decision	Unemployment; reduced life expectancy; hypertension; depression; suicide; hunger; homelessness; overcrowding ; living in sub-standard housing
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Workers not receiving paid sick days Disparities: Vulnerable populations (lowest-paid populations, those with greater need for medical and dependent care) have less access to paid sick days. Qualitative: A requirement for paid sick days is highly likely to have the following impacts: 1) more workers would take needed leave from work to care for or recover from an illness or to receive preventative care; 2) more workers would take needed leave from work to care for ill children and dependents; 3) improved compliance with public health guidance regarding seasonal influenza and community mitigation strategies for pandemic flu; 4) reduced hazard of worker-related foodborne disease transmission in restaurants; 5) reduced hazard of worker-related gastrointestinal disease transmission in long-term care facilities for the elderly; 6)mitigation of income loss, actual job loss and the threat of job loss for low-income workers during periods of illness or care for ill dependents
Baseline health and socio-demographic profile of those impacted	53.2% of Hispanics, 37.6% of Non-Hispanic Whites, 37.7% of Non-Hispanic Blacks, 32.6% of Asians and 50.7% "other" do not have paid sick days. Of those without paid sick days, 66.8% did not graduate from high school, 26.2% are college graduates, and 24.4% have advanced degrees. 61% of people without paid sick days earn between \$0 and \$34,999, 40.8% earn \$35,000-\$74,999, 29.3% earn \$75,000-\$99,000 and 26.9% earn \$100,000 and over. Of those without paid sick days, 68% have insurance, and 19.4% are employed by the government
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Extend the Healthy Families Act of 2009 to apply to businesses of all sizes, not just those that employ 15 or more employees
Impact of HIA on subsequent decisions and/or affected populations	The HIA resulted in paid sick days being classified as a matter of public health, rather than solely as a labor issue. It increased interest in HIA use around the country. It also elevated interest in paid sick leave policies around the country, specifically in Maine, New Jersey, Massachusetts, New Hampshire, Colorado and Wisconsin
Cost and Funding Source for HIA	Annie E. Casey Foundation- \$5000 (Analysis cost much more than that, paid by SFDPH)
Quantitative Results	None
Limitations of method	Time constraints prevented the examination of the relationship between the availability of paid sick days and preventable hospitalizations
Peer Reviewed	Yes

Table B.7: A Health Impact Assessment of the Healthy Families Act of 2009

General HIA Information (name, work group, location, year)	<i>A Rapid Health Impact Assessment of the Long Beach Downtown Plan</i> ; Human Impact Partners, East Yard Communities for Environmental Justice, Californians for Justice; Long Beach, CA; 2011 (Lucky et al. 2011)
Timeframe	3 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Proposed plan for the development of new residential, office, civic, cultural, and retail units, restaurants, hotel rooms, and approximately 5,200 jobs
Methods	Rapid HIA; literature review, gathered data from public sources, examined the aspects of the Downtown Plan relevant to housing and employment, made qualitative assessments about the consequences of the DTP for existing residents
Scoping: Health determinants affected by the decision	Overcrowding; housing overpayment; displacement and homelessness; mortality; child development and school performance; noise; depression; fires
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Residents of Long Beach, specifically low-income and vulnerable populations Disparities: lower income residents are more likely to be displaced by higher rents, mortgages and property taxes caused by gentrification. Qualitative: The plan could have the following health impacts on vulnerable populations: increased displacement, increased housing overcrowding, increased housing cost burden, gentrification, increased exposure to poor quality housing, increased unemployment, decrease in the number of local residents who earn greater than or equal to the self sufficiency wage, or decrease in Long Beach jobs filled by Long Beach residents
Baseline health and socio-demographic profile of those impacted	67% of extremely low-income renters and 62% of extremely low-income homeowners in Long Beach spend more than half of their income on housing costs. This is also true for 30% of low-income renters in the City. Some of the lowest rents in Long Beach can be found in the Downtown area where there is a concentration of older housing units. Overcrowding is a significant issue for the City of Long Beach
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Adoption of the proposed Affordable Housing Community Benefits; Adoption of the proposed Local Hiring Community Benefits and Project Labor Agreements
Impact of HIA on subsequent decisions and/or affected populations	Long Beach City Council approved their proposed plan without mitigations based on the HIA findings and recommendations
Cost and Funding Source for HIA	The California Endowment- \$30,000
Quantitative Results	None
Limitations of method	Lack of resources (indicator data), time constraint, decision-makers were not open to findings
Peer Reviewed	No

Table B.8: A Rapid Health Impact Assessment of the Long Beach Downtown Plan

General HIA Information (name, work group, location, year)	<i>Zoning for a Healthy Baltimore: A Health Impact Assessment of the Transform Baltimore Comprehensive Zoning Code Rewrite</i> ; Center for Child and Community Health Research, Johns Hopkins University; Baltimore, MD; 2009-2010 (Johnson Thornton et al. 2010)
Timeframe	11 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policy: Baltimore City's comprehensive zoning code rewrite (TransForm Baltimore)
Methods	Interviews with stakeholders and decision-makers including planners, developers and elected officials, literature review, quantitative assessment
Scoping: Health determinants affected by the decision	Violent crime; obesity and obesity-related illnesses; physical activity; pedestrian safety; diet and nutrition
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Baltimore City Disparities: disparities exist between different neighborhoods in the city. Disparities also exist between whites and African Americans, with African Americans faring worse Qualitative: The draft new code could increase the percentage of residents who live in mixed use neighborhoods, increase the percentage of urban gardens and farmers markets, create pedestrian oriented areas in business and industrial districts, and expand neighborhood residents' access to mixed use areas
Baseline health and socio-demographic profile of those impacted	Baltimoreans suffer from worse health outcomes in terms of obesity, heart disease and homicide than other Marylanders. There is a 20-year difference in life expectancy between Baltimore neighborhoods. This disparity exists because of socioeconomic factors
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Prevent concentration of off-premise alcohol sales outlets in districts that currently allow retail alcohol sales by right; employ comprehensive planning strategies to address problematic existing off-premise alcohol sales outlets via a "deemed approved" process; include crime prevention through environmental design principles in landscape ordinance and design standards; apply pedestrian oriented development goals to office residential, office industrial park, Bioscience, and special purpose districts; develop incentives for healthy food stores through the zoning code and through other mechanisms; provide clear mechanisms for incorporating stakeholders' feedback in all phases of the TransForm Baltimore rewrite process
Impact of HIA on subsequent decisions and/or affected populations	Some recommendations implemented in the 2nd draft of the comprehensive zoning code. Results still pending, policy not voted upon yet
Cost and Funding Source for HIA	The Robert Wood Johnson Foundation (Rapid response grant), \$149,969
Quantitative Results	Estimate that the draft new code will increase the percentage of Baltimore residents living in neighborhoods that allow off-premise alcohol sales outlets from 9% to 27%. Residents of high poverty communities would be 50% more likely to live in a neighborhood that allows off-premise alcohol sales outlets. The percentage of residents in neighborhoods that allow on-premise alcohol sales outlets would increase from 34% to 81%. The percentage of people living in districts that make reference to lighting/landscaping guidelines would increase from 15% to 98%. The percentage of city residents living in neighborhoods with zoning regulations that mention pedestrian oriented design will increase from 1% to 24%, with residents of high poverty almost twice as likely to live in such neighborhoods (31% vs. 16%). Percentage of residents living in mixed-use neighborhoods would increase from 32% to 80%. 18% of Baltimore City residents would live in neighborhoods designated TDD zones
Limitations of method	Limited public discussion and scoping interviews about the draft new code, limited current literature on the associations of the built environment with health, the draft new code was available to the authors at the time of the HIA, but the corresponding zoning maps were not
Peer Reviewed	Yes

Table B.9: Zoning for a Healthy Baltimore: A Health Impact Assessment of the Transform Baltimore Comprehensive Zoning Code Rewrite

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of California Assembly Bill 889: The California Domestic Work Employee Equality, Fairness, and Dignity Act of 2011</i> ; San Francisco Department of Public Health; San Francisco, CA; 2011 (Gaydos et al. 2011)
Timeframe	1 year
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Policy to provide domestic workers with a number of labor protections including right to paid overtime, right to 8 hours of uninterrupted sleep and meal and rest breaks
Methods	A limited HIA: literature reviews, collected statistics about health and labor conditions
Scoping: Health determinants affected by the decision	Musculoskeletal disorders; asthma and respiratory problems; skin diseases; injury; stress/anxiety; cardiovascular disease; diabetes; obesity; depression; mortality
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Domestic workers in California Disparities: domestic workers have been excluded from protections under federal and state labor laws such as the 1938 Fair Labor Standards Act, the 1935 National Labor Relations Act, and the 1970 Occupational Safety and Health Act. Lack of legal protections and labor standards, in addition to isolated workplaces, gender and racial discrimination, language barriers etc. Qualitative: Treatment of occupational injuries under the workers' compensation system is likely to prevent long term disability among workers and may reduce job turnover; Sufficient sleep would reduce risk of pre-mature death, chronic disease, and depression for 24-hr and live-in caregivers; If AB 889 passes, barriers to worker utilization of laws still need to be addressed; Improved data on the occupational health outcomes of domestic workers are needed. Domestic workers utilizing workers compensation because of the legislative change are likely to have more rapid and complete recovery, decreased long-term disability, and increased productivity and well being
How does study describe baseline health and socio-demographic profile of those impacted? Can this be used as a solid baseline against which possible health impacts can be assessed?	There are 218,185 domestic workers in California. 42.2% of the total domestic workers are employed as maids and housekeeping cleaners, 34.8% are employed as personal and home care aides, and 11.4% are employed as childcare workers. 90% of domestic workers are women, the majority are women of color, more than 40% are immigrants, and 22% are undocumented workers. In 2005, domestic workers made on average \$6.82-\$8.89 per hour. Less than 20% of domestic workers in New York and San Francisco Bay Area earn a wage sufficient for all of their basic needs. More than half of these surveyed workers were primary income earners for their families, and 72% also supported family members abroad. Most do not have access to employer-based health insurance. Most surveyed domestic workers did not report receiving meal or rest breaks, paid sick days or health and safety training. Domestic workers face increased occupational hazards for musculoskeletal injury, asthma and dermatitis, sleep disturbances, exposure to infectious diseases, and work stress. Vulnerable because of their gender, income, class, ethnicity, educational attainment, languages spoken and immigration status
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Include sufficient numbers of domestic workers in Bureau of Labor Statistics surveys and analysis to ensure sufficient sample sizes for data analysis; assess and enforce appropriate penalties for employer retaliation against workers who file workers' compensation claims; educate insured homeowners and renters about the use of workers' compensation coverage included in policies; educate employers about the legislation, the health benefits of sleep and rest breaks for workers and care-recipients, and how workers compensation can help provide much needed medical care to workers, maintain continuity of service and care, and safeguard against lawsuits in the event of a workplace injury; support the organization of domestic worker collectives that educate and train their members on their legal rights, and how to protect health and safety on the job; explore the creation of a business/program to provide temporary shift coverage for domestic workers; educate medical providers about appropriate documentation for work-related injuries and illnesses; document the relationship between immigration enforcement and enforcement of labor protections; document the impact of new regulations on the structure and working conditions of the industry

Impact of HIA on subsequent decisions and/or affected populations	Pending
Cost and Funding Source for HIA	Approximately \$8000 from the UC Berkeley Health Impact Group, through a grant from the CDC, was allocated for one full time graduate student research intern. \$432 was provided by UCB for the focus groups
Quantitative Results	None
Limitations of method	Lack of funding prevented extensive outreach to domestic workers, data analysis, and proper analysis of findings. Limited public data on domestic worker industry
Peer Reviewed?	Yes

Table B.10: A Health Impact Assessment of California Assembly Bill 889: The California Domestic Work Employee Equality, Fairness, and Dignity Act of 2011

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment: Accessory Dwelling Units</i> ; Benton County Health Department; Benton County, OR; 2010 (Benton County Health Department 2010)
Timeframe	Not Reported
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policy to allow accessory dwelling units (ADUs) in rural Benton County
Methods	Healthy Development Measurement Tool
Scoping: Health determinants affected by the decision	Environmental stewardship; sustainable and safe transportation; social cohesion; public infrastructure/access to goods and services; adequate and healthy housing; healthy economy; demographics; health outcomes
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The people of Benton County, specifically those living in rural areas Disparities: none Qualitative: Positive effects: ADUs will: provide living spaces for persons with disabilities of medical hardships to live near caretakers or family members; generate additional income for homeowners by offering the unit as a rental; provide an affordable housing alternative for individual and small households in rural areas; encourage multi-generational housing that strengthens the family unit; reduce the number of sub-standard and overcrowded housing units by allowing legal development of accessory units; allow elderly homeowners to "age-in-place" and remain in their home by providing living space for a caregiver or family member. Negative effects: ADUs will: allow development in rural areas with poor access to schools, food markets, medical facilities and parks; Allow development in rural areas with poor public transit services and high auto-dependence; increase vehicle emissions caused by more people driving to and from rural areas; allow development in rural areas without adequate pedestrian and bicycle infrastructure, reducing walkability and opportunity for physical activity
Baseline health and socio-demographic profile of those impacted	N/A
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Adopt accessory dwelling units with the following mitigations: 1) resident of ADU must be the homeowner, a relative or a caregiver; 2) the units cannot be offered as a rental; 3) review the policy after adoption to identify any unpredicted impacts; 4) "cap" the number of annual permits allowed to limit potential negative impacts
Impact of HIA on subsequent decisions and/or affected populations	Benton County's code was amended to allow ADUs
Cost and Funding Source for HIA	Not Reported
Quantitative Results	None
Limitations of method	Not Reported
Peer Reviewed	No

Table B.11: Health Impact Assessment: Accessory Dwelling Units

General HIA Information (name, work group, location, year)	<i>Rapid Health Impact Assessment Crook County/City of Prineville Bicycle and Pedestrian Safety Plan</i> ; Crook County Public Health Department; Crook County, OR; 2011 (Williams et al. 2011)
Timeframe	5 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policy to create an Active Community (a place where residents and visitors can readily participate in everyday physical activity) by improving the safety and accessibility of sidewalks and walking paths in Prineville, improving the safety and accessibility of bicycle use in Prineville, and identifying key areas in the community for pedestrian safety
Methods	Literature review, community engagement to form an advisory council, community surveys (windshield tours)
Scoping: Health determinants affected by the decision	Physical activity; heart disease; high blood pressure; diabetes; obesity; some cancers
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Community of Prineville Disparities: disparities created through high unemployment rate, minimal bus system and lack of bicycle and pedestrian infrastructure. Vulnerable populations include rural residents and school-age children Qualitative: The availability of sidewalks would significantly increase the number of students who would walk to school. This would contribute to a more livable community by increasing pedestrian safety and reducing the number of vehicles on city streets during peak school traffic hours. Prineville's/Crook County's scenery and rural roads could make it a popular destination for cyclists, but many of these roads lack shoulders, which increases risk of incident
Baseline health and socio-demographic profile of those impacted	Crook County has the highest unemployment rate in the state of OR, a minimal bus system, and a lack of infrastructure for bicycle safety and pedestrian safety. There are 20,978 individuals in Crook County, 22.9% are between 0 and 17 years old. 89.4% are non-Hispanic whites, 0.2% are African American, 7% are Hispanic, 1.4% are American Indian/Alaska Native, 0.5% Asian, 1.5% "other". 16.2% of Crook County residents live below the federal poverty level. The poverty rate among single mothers is 61%, and 65% of Hispanics live in poverty. 25% of the county's children live in poverty. 80.5% of adults are high school graduates, 12.6% have a bachelor's degree or higher. The median family income is \$51,7000. 62.6% of public school children were eligible to receive free/reduced price lunches at school in 2010. In January 2010, there were 244 homeless individuals. 27.3% of adults in the county smoke. The leading causes of death are cancer and heart disease. In 2004-2007, 39.1% of adults were overweight, 23.6% obese, and only 16% reported eating appropriate portions of vegetables and fruits per day. 27.5% of 8th graders and 29.1% of 11th graders were at risk of being overweight. 21.5% of 8th graders reported eating 5 servings of fruit and vegetables per day, 14.1% of 11th graders reported eating 5 servings per day. 60.2% of 8th graders reported exercise, 48.9% of 11th graders reported exercise
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Improve the safety and accessibility of sidewalks and walking paths in Prineville: increase connectivity of existing sidewalks and increase overall existence of sidewalks; pursue "Rails to Trails" funding to increase the number of pedestrian trails. Improve the safety and accessibility of bicycle use in Prineville: increase existence of bicycle lanes in Prineville/Crook County; create connectivity of bicycle lanes; reduce/eliminate parked cars in bicycle lanes; bicycle safety education and enforcement; increased bicycle parking facilities throughout Prineville. Identify key areas in the community for pedestrian safety: develop a process for prioritizing pedestrian route improvements based on demand, existing conditions, and proximity to a designated Safe Route to School corridors; signage to direct individuals to walking paths in the community; develop a pedestrian education campaign; implement traffic calming, including clear identification of school speed zones; improve sight distances for turning cars where needed; create a safe crossing area for Highway 126 near Crooked River bridge; create strategic plan for student drop off and pick up around all school zones and educate students and parents regarding the plan
Impact of HIA on subsequent decisions and/or affected populations	The City of Prineville is including more walking/biking trail infrastructure into their planning process for the city. There was also a follow-up meeting of community planners and construction businesses to determine a method of resurfacing the existing bike path through the middle of town. Prineville also resubmitted a grant specific to the repaving of the main bike path.
Cost and Funding Source for HIA	CDC & The Association of State and Territorial Health Officials through a grant administered by the Oregon Health Authority, Office of Environmental Health- \$12,500
Quantitative Results	None

Limitations of method	None (according to authors)
Peer Reviewed	No

Table B.12: Rapid Health Impact Assessment: Crook County/City of Prineville Bicycle and Pedestrian Safety Plan

General HIA Information (name, work group, location, year)	HB 2800: Oregon Farm to School and School Garden Policy; Upstream Public Health; Portland, OR; 2011 (Henderson 2011b)
Timeframe	9 months (7months to produce findings)
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policy to encourage schools to sell locally grown food and develop school garden programs (2011 Farm to School and School Garden Legislation)
Methods	Literature review, secondary data analysis, economic procurement analysis, interviews, committee feedback, community forums and communication workshop
Scoping: Health determinants affected by the decision	Employment; diet and nutrition; F2S & SG K-12 education opportunities; environmental health; social capital
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: school children, school workers, farmers, processors, distributors, food sector workers, families Disparities: Employment: farmers, processors, distributors, food sector workers, low-income and moderate income families, metropolitan and non-metropolitan communities; Diet and Nutrition: public school students, low-income students (includes vulnerable ethnic/racial populations (Latino, African American, Native American, Asian American), school nutrition services staff); Farm to School and School Garden K-12 Education: garden participants (students, teachers, school staff, families, community members); Environmental Health: farmers, farm workers, farmer/worker families, rural communities, students; Social Capital: garden participants, school nutrition services staff, farmers. Qualitative: Farm to school reimbursement funds would create jobs, increase student participation in school meal programs, improve household food security and strengthen connections with Oregon's food economy. Food, Garden & Agriculture grants would increase childhood food preferences for fruits and vegetables, shape long-term healthy diet choices that affect children's learning and academic achievement while preventing obesity. HB 2800's reimbursement and garden grant programs improve the quality and diversity of food offered during school meals. Food, Garden and Agriculture education grants would increase kids' understanding of what they eat, how it is grown and how it affects their bodies
Baseline health and socio-demographic profile of those impacted	Oregon's unemployment rate was 10.5% in December 2010. In 2009, 14% of households were food insecure and 6% of them were hungry. 19% of Oregon kids live in poverty. During the 2009-2010 school year 33% of children eligible for free or reduced lunches did not participate. 22% of low-income children did not graduate during the 2006-2008 school years. 1 in 4 Oregon adolescents are overweight or obese. In 2009, 58% of 11th graders ate three or less servings of fruits and vegetables a day
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Amend HB 2800 to specify that schools can only get reimbursed for foods produced or processed in Oregon; Food, Agriculture and Garden education grants will be preferentially given to school districts serving: a low-income student population, defined where 40% are eligible for free or reduced meals; schools with a racially diverse student population, defined as 20% or more non-white; schools in rural or urban areas with limited food access defined as 12% or more residents are low-income and live more than 10 miles from a grocery store; Specify funding criteria for Food, Agriculture and Garden education grants; secure grants to fund mobile processing equipment, school or farmer-site processing, and storage units in areas with limited distribution systems; existing programs, such as Oregon Master Gardeners should collaborate with other garden support organizations across the state to efficiently utilize existing resources in supporting Farm to School and school garden efforts; track and evaluate economic and nutritional impacts; conduct research on health outcomes related to Farm to School and school garden programs
Impact of HIA on subsequent decisions and/or affected populations	Two out of three recommendations from the HIA for changes to policy content were fully incorporated into the amended Bill, and the third recommendation was partially incorporated into the amended Bill.
Cost and Funding Source for HIA	Northwest Health Foundation-\$10,000; Health Impact Project- \$50,000-\$60,000
Quantitative Results	None

Limitations of method	Data limitations: the level of detail in the data available was not sufficient to conduct the desired analysis. For example, they knew that rural areas would benefit from the plan more than urban areas would, but could not determine which counties or people would benefit the most in rural areas. Funding: Would have felt more comfortable with \$100,000. Time: Worked under the policy deadline; needed to produce results within 7 months. Would have felt comfortable with 2 additional months. Extra time would have allowed for the accumulation of additional stakeholder input. For example, interviews with school children required permission slips, which could not be collected in the given timeframe
Peer Reviewed	No

Table B.13: HB 2800: Oregon Farm to School and School Garden Policy

General HIA Information (name, work group, location, year)	<i>Humboldt County General Plan Update Health Impact Assessment</i> ; Humboldt County Public Health Branch, Humboldt Partnership for Active Living, Human Impact Partners; Humboldt County, CA, 2008 (Humboldt County Public Health Branch 2008)
Timeframe	1 year
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Plan Alternatives for the General Plan Update, each promoting new housing development
Methods	Community focus groups, revised version of the Healthy Development Measurement Tool was used to create a rural HDMT with 35 indicators in 6 categories: housing, transportation, public infrastructure, economy, public safety, and environmental stewardship
Scoping: Health determinants affected by the decision	Mental health; childhood development; segregation; decreased money available for basic living needs; homelessness; obesity; diabetes; heart disease; high blood pressure; lack of "complete neighborhoods"; motor vehicle collisions; musculoskeletal pain; fatalities; respiratory illnesses; employment rates
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The current and future residents of Humboldt County. Disparities: demand for housing is highest among low-income people; homeless people. Vulnerable populations: seniors, children, Native Americans, and those living close to the poverty line. Qualitative: Plan Alternative A is anticipated to provide housing for the projected population growth in the County, but is not expected to meet the demand of existing residents. Plan Alternatives B and C have the potential to meet existing unmet demand, but this depends on the affordability of the housing that is developed. From a health perspective, Plan Alternative A is more suitable
Baseline health and socio-demographic profile of those impacted	Demand for housing is highest among low-income people. There are between 4,000-6,000 homeless people in the county. Humboldt County residents traveled 27 vehicle miles per day in 2006. The average travel time to work is 17.3 minutes, though those living in low residential density areas have a 26% higher average length of commute time than those in high residential density areas. Only 1% of the population uses public transportation to commute to work. Only 3% of the county roadways have Class I or II bike lanes. There were 163 automobile crashes involving pedestrians from 1999-2002. County residents have much higher arrest rates for DUI's and alcohol violations than California as a whole, in addition to having higher rates of drug and alcohol treatment
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Plan A is the best option in terms of the following indicators: housing, transportation, public infrastructure, public safety and environmental stewardship
Impact of HIA on subsequent decisions and/or affected populations	A number of recommendations were adopted straight from the HIA including the passing of an inclusionary zoning ordinance. No final decision made regarding which alternative to use. Raised interest and awareness. The HIA initiated the public health departments involvement in development of the General Plan proposals
Cost and Funding Source for HIA	The California Endowment, \$60,000-\$80,000
Quantitative Results	None
Limitations of method	Some data were only available at the zip code level, more detailed analysis would have been prohibitively time consuming
Peer Reviewed	No

Table B.14: Humboldt County General Plan Update Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment of Potential Modifications to Physical Education Requirements in California</i> ; UCLA School of Public Health; Los Angeles, CA; 2007 (J. Fielding et al. 2007)
Timeframe	12-18 months
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Policies that aim to increase physical activity levels for students in grades K-12 by increasing the quality and quantity of physical education provided by schools
Methods	Quantitative spreadsheet-based model of the long-term increases in physical activity, literature review
Scoping: Health determinants affected by the decision	Physical activity; exposure to air pollution; psychosocial factors; increased academic performance
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: 7th to 12th graders in California. Disparities: girls, minorities Qualitative: Increased physical activity has been shown to decrease body fat, improve overall blood lipid profiles (in children), increase bone mass (in children), improve cardiovascular fitness and quality of life for asthmatics, promote mental health, and decrease the rates of teen pregnancy
Baseline health and socio-demographic profile of those impacted	NHANES showed that 16% of children and adolescents are obese (1999-2000). 24.3% of male students and 37.9% of female students in the US are classified as inactive. The percentage of students who attended P.E. class daily has decreased from 41.6% (1991) to 32.3% (2001)
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Implement a policy to require that students spend at least 50% of each P.E. period engaged in moderate-to-vigorous physical activity
Impact of HIA on subsequent decisions and/or affected populations	Did not lead to policy changes, but it helped to focus LA school district efforts to increase time spent in physical activity during physical education
Cost and Funding Source for HIA	The California Endowment-\$60,000-\$80,000
Quantitative Results	Introducing PE requirements in 11th and 12th grade has the greatest impact averaged for all secondary (7th-12th grade) students in terms of additional minutes of MVPA/day. There is an 8.6 minute increase in MVPA for 11th and 12th graders, averaged for both normal weight and overweight students, which works out to be an increase of 10.5 minutes for normal weight and 5.4 minutes for overweight students. Increasing the percent time in MVPA to 50% translates into a daily MVPA increase of 10 minutes for overweight middle school students, whereas the increase in MVPA/day is only about 5 minutes for overweight 11th and 12th graders (scenario 3), and 2 minutes for overweight middle schoolers at schools with increased compliance w/state P.E. requirements (scenario 2). Introducing a P.E. requirement for 11th and 12th graders shows the greatest increase in total minutes of MVPA for all students
Limitations of method	Policy changes to P.E. instruction in elementary grades were not analyzed due to limited information on the statewide prevalence of obesity and fitness levels of young school age children, lack of information on the amount and quality of PE instruction in the elementary grades in California, and significant obstacles to implementing widespread changes in elementary school P.E. programs given that P.E. is often taught by regular classroom teachers and often incorporated into other classroom activities. Only "Long-term increases in physical activity" had enough data to model quantitatively
Peer Reviewed	No

Table B.15: A Health Impact Assessment of Potential Modifications to Physical Education Requirements in California

General HIA Information (name, work group, location, year)	<i>Concord Naval Weapons Station Reuse Project Health Impact Assessment</i> ; the Human Impact Partners; Oakland, CA; 2009 (C. Harris et al. 2009)
Timeframe	9 months
Incorporated into EIA/other assessment	Yes, EIA
Proposed policy, plan, program or project	Plan Alternatives under consideration for the Concord Naval Weapons Station Reuse Project: Concentration and Conservation Modified Alternative and the Clustered Villages Modified Alternative
Methods	Focus groups, field observations, utilized data collected from the Draft Environmental Impact Report, the U.S. Census Bureau, Concord's General Plan and other city documents, the Association of Bay Area Governments, and the California Nutrition Network
Scoping: Health determinants affected by the decision	Housing; jobs; transportation; retail and services; parks and open space
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The residents of Concord Disparities: Those living in Monument Corridor (mostly immigrants) Qualitative: Affordable housing proposed by all Alternatives will not be sufficient. More than half of the newly created jobs will not pay a living wage, and many will not offer health or paid sick day benefits. Each of the Alternatives provides significant amounts of open space; those proposing the highest densities provide the most. Higher residential density near the BART station and new bus service to BART would lead to more public transit use and reduce driving. Higher residential density Alternatives with retail centers, community facilities and other public services distributed throughout the site would place more residents near the goods and services they need to live healthy lives. The Clustered Villages Modified Alternative provides for more acreage for parks and active recreation than the Concentration and Conservation Modified Alternative. The Concentration and Conservation Modified Alternative would provide the maximum potential for achieving positive health impacts related to parks and open space. The Clustered Villages Modified Alternative contains the most land for neighborhood, community and regional parks, and the Concentration and Conservation Modified Alternative contains the most land for open space. The Concentration and Conservation Modified Alternative would make retail accessible to the highest number of residents
Baseline health and socio-demographic profile of those impacted	43,456 households in Concord; average household size is 2.74; median household income is \$54,719; per capita income is \$24,197; 9,000 households earning 50% or less of median household income; percentage of residents living in poverty: 24.5%. Lower income households are located in the Monument Corridor and near freeways rather than dispersed throughout the city. Retail trade and healthcare and social assistance are the most popular professions in Concord (with 18% and 15% of the population, respectively). Arts, entertainment and recreation, in addition to educational services were the least popular professions, each with 1% of the population. The average work commute time (one-way) for Concord residents is 28.9 minutes
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Maximize residential density, distribute retail and services throughout the residential neighborhoods and maximize land available for parks and open space; disperse affordable housing throughout the project site; adopt a Living Wage Ordinance; develop an operations and maintenance plan for open space to ensure ongoing care and use; ensure new neighborhoods are walkable/bikeable; promote public transport use; encourage healthy goods and services to be provided on the CNWS site and discourage unhealthy goods; both Alternatives need mitigations to be implemented before the footprint of development is finalized and the Navy puts the land to auction
Impact of HIA on subsequent decisions and/or affected populations	The City of Concord and its consultant staff revised its Environmental Impact Report following a discussion with Human Impact Partners about the HIA. The final EIR included some of the recommendations from the HIA, but did not change very much. The Concord City Council voted for the Clustered Villages Modified Alternative, and will ensure that there is significant affordable housing built
Cost and Funding Source for HIA	The California Endowment, \$40,000-\$60,000

Quantitative Results	The Clustered Villages Modified Alternative would provide an average wage for all 26,463 new permanent jobs of \$24.20. The median hourly wage would be \$19.60. 57% of jobs would pay below \$21.41 per hour (living wage for family of one adult, one child). 36% of jobs would pay below 3/4 of the living wage. The Concentration and Conservation Modified Alternative would provide an average wage for all 21,257 new permanent jobs of \$25.21 per hour. The median hourly wage would be \$19.60. 56% of jobs would pay below \$21.41 per hour (living wage for family of one adult, one child). 36% of jobs would pay below 3/4 of the living wage
Limitations of method	Availability of data, field observations. Possible that unforeseen events could occur that may limit the accuracy of this assessment
Peer Reviewed	Yes

Table B.16: Concord Naval Weapons Station Reuse Project Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Fort McPherson Rapid Health Impact Assessment: Zoning for Health Benefit to Surrounding Communities during Interim Use</i> ; Georgia Health Policy Center; Atlanta, GA; 2010 (Georgia Health Policy Center 2010)
Timeframe	"short"
Incorporated into EIA/other assessment	No
Proposed policy, plan, program or project	Program for the Department of Defense's base realignment and closure of Fort McPherson
Methods	Rapid HIA: Used the Georgia Tech/Stand-Up studio report, a list of interest areas and recommendations submitted by McPherson Action Community Coalition, field/observation notes from the City of Atlanta Planning Department, photos and notes from a neighborhood windshield tour, and meetings with City Planners and LRA
Scoping: Health determinants affected by the decision	Nutrition; physical activity; alcohol and tobacco use; social cohesion
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: the population of Atlanta, GA, specifically those in Fort Valley, Compbelton Road, Adams Park, Pomona Park, Venetial Hills, and Sylvan Hills, in addition to the City of East Point. Disparities: none Qualitative: In the first 5-10 years, people in surrounding areas will be most affected by changes on the base. Community gardens promote healthy eating, social cohesion and nearby home values. Farmer's markets create jobs, improve the local economy, provide the best selection of in-season foods, increase food safety and reduce fuel and pollution effects of transport. Social connections contribute to health and well-being. People are more physically active when they have access to trails and parks. They are more likely to use trails when they can access them from multiple places. Fast food contributes to obesity of children and adults. Secondhand smoke contributes to cardiovascular disease, lung cancer, respiratory disease, disability and premature death. Tobacco advertising accounts for 1/3 of smoking experimentation in youth. Children are twice as susceptible to tobacco advertising as adults. People who are exposed to more alcohol advertisements consume more alcohol. Alcohol-related health problems such as cirrhosis, car crashes and violence are related to availability of alcohol
Baseline health and socio-demographic profile of those impacted	Neighborhoods surrounding the base lack access to health-promoting green space, recreational opportunities, services and commercial offerings
How does the HIA convey uncertainty	N/A
Recommendations to decision makers and stakeholders	Allow community gardens, small-scale farming, and farmers stands within 1/4 mile of schools, senior housing, MARTA stations, and adjacent neighborhoods to the north, west and south; permit use of selected, accessible existing buildings for community meetings, education and children's programs; limit fast food restaurants and prohibit their development near areas in which children congregate; prohibit bars and restaurants that do not support the state tobacco policy; reduce alcohol availability
Impact of HIA on subsequent decisions and/or affected populations	Not Reported
Cost and Funding Source for HIA	No funding
Quantitative Results	None
Limitations of method	Lack of data on the current health status of communities surrounding Fort McPherson. Lack of funds. Lack of time: not possible to conduct a comprehensive literature review, not able to collect baseline and primary data, or recruit a wider representation of the stakeholders. Did not have access to the zoning blueprint proposal
Peer Reviewed	No

Table B.17: Fort McPherson Rapid Health Impact Assessment

General HIA Information (name, work group, location, year)	29th St./San Pedro St. Area Health Impact Assessment; Los Angeles Association of Community Organizations for Reform Now; South Los Angeles, CA; 2009
Timeframe	6-8 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Project for the development of The Crossings at 29th Street
Methods	Reviewed health statistics, results of a survey of almost 300 community residents, and reports about existing neighborhood health conditions, utilized available statistics, qualitative and quantitative research, expert opinion, and community experiences, field observations
Scoping: Health determinants affected by the decision	Housing; pedestrian safety; neighborhood walkability; public transit; health services and food retail; education; parks and recreation facilities
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The community in the South LA area. Disparities: for more than 50 years, low-income families lived within 5 yards of a chrome electroplating facility, which emitted hexavalent chromium. Qualitative: The Crossings could make basic services (mail, trash collection, police etc.) more efficient, and could lead to an increase in property values. It might also discourage people from walking, leading to weight gain and high blood pressure, in addition to an increase in air pollutants from vehicle miles. Housing costs currently proposed for The Crossings will not be affordable for those local residents most in need of housing. Offering mixed-income housing at The Crossings will not change the overall economic balance of the community. The demand for housing units at The Crossings for units with more than 2 bedrooms is likely to exceed the number currently proposed. The area around The Crossings is not conducive or safe for those who would like to walk or bike. The need for increased public transportation is likely to persist as The Crossings development is constructed. The Crossings is well positioned to facilitate communication between health service providers and local residents, providing information about locally available health care services, and helping providers to understand the health care needs of the local community. UHC is well positioned to support the establishment of healthy food retail at The Crossings by dedicating the proposed retail space at the project site for this purpose. A significant school reform may be needed to help the area's schools meet the standards set by California Public Schools Accountability Act. Schools in the vicinity of The Crossings will likely meet the distance requirement set by the California Code of Regulations. The number of children under the age of 5 living in close proximity to The Crossings exceeds the capacity of the existing early education centers in the area. There is demand for a park and recreation space at The Crossings
How does study describe baseline health and socio-demographic profile of those impacted?	For South LA: 22% of housing units are owner occupied. There are about 23,721 housing units in the 4.4 square mile zip code area near The Crossings, which is a density of 8.5 units per acre. In 2007, the average family would need to earn \$69,600 per year in order to spend what is considered to be an affordable percent of their income on rent. In 2005, the annual median income for a family of 4 was \$55,100. Of the residents surveyed in the project area, 30% reported earning an annual household income between \$20,000 and \$32,000, and 60% indicated that their household income was less than \$20,000 per year. Two-thirds of the renter-occupied housing units in the area are overcrowded. 5 leading causes of death: coronary heart disease, diabetes, homicide, lung cancer and pneumonia/influenza. 39% are overweight, 37% are obese
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Offer affordable housing for local community residents most in need of housing; attract residents with mixed levels of income to the area; the size and number of bedrooms in housing units being built should reflect the range of family size in the local population; establish a schedule of regular activities for residents that will increase social cohesion; install wide sidewalks and ensure that the sidewalks have curb ramps; install lighting on the streets; ensure that paths/green space are accessible to the public as alternative walking routes; improve public transportation; build partnerships with local health care providers to facilitate residents' knowledge about and access to their services; increase residents exposure to and consumption of locally grown/healthy food; establish a library; create pedestrian friendly pathways; provide trash cans

Impact of HIA on subsequent decisions and/or affected populations	The developer was receptive to HIA recommendations. The community presented findings and recommendations of the HIA to city council member Jan Perry, who expressed support for all of the recommendations. The entire development will take about 10 years to build, so results are pending
Cost and Funding Source for HIA	The California Endowment. Cost: \$60,000-\$80,000
Quantitative Results	None
Limitations of method	Limited budget-- Could not address all priority research questions. Findings limited by available data. It is possible that unforeseen events could occur that may limit the accuracy of the assessment
Peer Reviewed?	No

Table B.18: 29th St./San Pedro St. Area Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>SE 122nd Avenue Planning Study Health Impact Assessment</i> ; Oregon Public Health Institute; East Portland, OR; 2011 (White & Dobson 2011)
Timeframe	1 year
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Plan to create a 20 minute neighborhood
Methods	Collection and analysis of demographic, land use and urban form data, literature review, community workshops and meetings, review of recent previous local efforts to gather community input, field visits and site observations, partnered with local community-based organizations to solicit input from under-represented groups (renters, low-income residents, transit riders, immigrants and communities of color)
Scoping: Health determinants affected by the decision	Physical activity; accessing healthful foods; social engagement/cohesion; bicycle and pedestrian traffic safety; exposure to outdoor air pollutants
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Portland; Disparities: children, older adults, immigrants, communities of color, low-income individuals, and people with disabilities. Qualitative: The Pilot Study's recommendations will likely increase walking, biking and active recreation levels in the area, which would improve health related outcomes related to physical activity. It will likely lead to lower per capita vehicle-miles-traveled and related per capita pollutant emissions from automobiles as a result of increased walking and biking rates. If this occurs, all neighborhood residents would experience decreased exposure to outdoor air toxics, and a decreased likelihood of suffering from multiple cardio-respiratory illnesses. Increased commercial activity in the area might increase VMT in the area. Increased outdoor activities would increase people's exposure to outdoor air pollutants. The Pilot Study recommendations will lower crash rates for bicyclists and pedestrians. The Pilot Study's recommendations would improve opportunities for social cohesion in the study area, and these opportunities would be available to all area residents. The recommendations would increase food retail and community gardening opportunities and improve accessibility to these resources. The recommendations could create more opportunities for unhealthy food retail establishments such as convenience stores and fast food restaurants
How does study describe baseline health and socio-demographic profile of those impacted?	East Portland has experienced a population growth of almost 50% between 1990 and 2010, with a large influx of immigrants, racial minority groups, low-income households, and children. The area's median household income has dropped relative to the rest of the city and average household size has risen. In the tri-county area around Portland, 44% of adults aren't getting enough exercise. 55.5% of 8th graders in the tri-county Portland area get enough exercise, and 45.8% of 11th graders in the area get enough exercise. There were 3 pedestrian and one bicyclist fatalities in the study area between 1999 and 2009
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Improve pedestrian infrastructure and pedestrian network connectivity; involve the neighborhood's immigrant groups and communities of color in designing and improving public spaces; address the concerns of low-income and minority transit riders; develop a monitoring program to assess changes in levels of exposure to outdoor air toxics; support bicycle and pedestrian encouragement and education programs; conduct a Community Food Assessment; develop and apply a "healthy food zone" ordinance
Impact of HIA on subsequent decisions and/or affected populations	Pending
Cost and Funding Source for HIA	U.S. Centers for Disease Control and Prevention, National Network of Public Health Institutes
Quantitative Results	None
Limitations of method	Not Reported
Peer Reviewed?	No

Table B.19: SE 122nd Avenue Planning Study Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Hood River County Health Department Health Impact Assessment for the Barrett Property</i> ; The Hood River County Health Department; Hood River County, OR; 2011 (The Hood River County Health Department 2011)
Timeframe	5 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Project to develop a community park on the Barrett property
Methods	Open forum meetings, surveys, a focus group with high school students
Scoping: Health determinants affected by the decision	Chronic disease management and risk factors; nutrition and food insecurity; behavioral and social health
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: the residents of Hood River County. Disparities: Mexican-Americans have higher rates of obesity due to higher risk factors such as acculturation, poverty, lack of access to services, and less health-care coverage than any other groups in the area. The elderly, the disabled. Qualitative: Physical activity increases, and the likelihood of overweight decreases, when the population is surrounded by more places to recreate. Organized activities and events in parks, including sports competitions and other attractions, have the strongest correlation to increased park use and community-level physical activity. Younger individuals are attracted to more physically challenging and competitive environments, while seniors prefer less vigorous activity. Paved trails are more versatile and support a wider range of physical activities for a broader demographic of age and ability. A mixture of programming, staffing, low cost/free usage fees, increased operation hours, and community outreach play a larger role in park use than the equality of the facilities or the safety of the park. Community gardens increase community cohesion, reduce violence and create a positive self-image in its residents. The risk of exposure to pesticides on the Barrett Property is likely to be great
How does study describe baseline health and socio-demographic profile of those impacted?	22,385 people live in the county. 73% Caucasian, 27% Latino (primarily first or second generation immigrants from Mexico). Most important economic industries include agriculture, timber, tourism, and retail trade. 27% of the population is under the age of 18. Hood River County is an economically distressed area (its unemployment rate is over 8%). About 11.2% of individuals live in poverty. The median income is \$48,895. 58% of children qualify for free or reduced lunch. 46% of respondents to the Providence Hood River Memorial Hospital Community Assets and Needs Assessment reported a chronic disease. 7% of the population has diabetes. The top three leading causes of death in 2007 were heart disease, cancer and cerebrovascular disease
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Test the soil for chemical residues; monitor development of the land for unintended consequences relative to health; develop the land into a park with a variety of features; promote the park to vulnerable populations
Impact of HIA on subsequent decisions and/or affected populations	Pending
Cost and Funding Source for HIA	The Center for Disease Control and the Association of State and Territorial Health Officials. Donations from the Hood River County Health Department, Nuestra Comunidad Sana of The Next Door, Inc., the Hood River Valley Parks and Recreation District and Oregon State University Extension Services, amount undisclosed
Quantitative Results	None
Limitations of method	Not Reported
Peer Reviewed?	No

Table B.20: Hood River County Health Department Health Impact Assessment for the Barrett Property

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment: National Nutrition Standards for Snack and a la Carte Foods and Beverages Sold in Schools; Kids' Safe & Healthful Foods Project, Health Impact Project, Upstream Public Health; USA; 2012 (Anon 2012a)</i>
Timeframe	Approximately 1 year
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	National nutrition standards for snacks, a la carte items, and beverages sold in schools
Methods	Literature reviews, state policy reviews, stakeholder interviews, data analysis
Scoping: Health determinants affected by the decision	Financial constraints, food safety, school-supported physical activity, enrichment learning opportunities, diet and nutrition outcomes
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: School children in the U.S. Disparities: Vulnerable populations have increased rates of obesity/overweight, type II diabetes, hypertension, and untreated dental caries, and are more likely to have limited access to nutritious food. Vulnerable: low income, ethnic minority students Qualitative: Decreasing the availability of snacks and a la carte items will lead to increased participation in school meals. There is minimal evidence that the school food service environment will be negatively impacted by the removal of snacks/a la carte items. Any state lacking snack food and beverage policies that implements these policies will experience an overall increase in total meal participation. An increase in meal participation will likely lead to minor increases in food service costs, and these increases in cost will not compromise meal quality. School districts or a student activity group may lose funds as a result of a national snack food and beverage policy, though it is also possible that they will experience no change. Schools lacking a snack food and beverage policy may see a slight increase in revenues. A national snack and a la carte food and beverage policy will likely increase students' consumption of healthy foods, and decrease consumption of unhealthy foods. It is unknown whether the policy will impact total dietary intake
Baseline health and socio-demographic profile of those impacted	4.2 million children are considered to be food insecure or experience very low food security. 21.3% of children live in food insecure households. 17.2% of black and 18.7% of Hispanic children are food insecure or experiencing very low food security, compared to 7% of white non-Hispanic children. In 2004, children consumed an average of 527 'empty calories' per day. 19.6% of children aged 6 to 11 and 18.1% of 12 to 19 year olds were obese in 2008. In 2007, black children had a 71% greater chance than white children of being obese, and Hispanic children had a 76% greater chance of being obese. 42% of children 6 to 11 years old obtain 60 minutes of physical activity per day compared to 8% of adolescents. One in every 400 children has type II diabetes. 19% of children between the ages of 2 to 19 have untreated tooth decay (28% of black, non-Hispanic children, 31% of Hispanic children of Mexican origin, and 19% of white, non-Hispanic children). 63% of elementary, 74% of middle, and 79% of high school students attend schools with wellness policies with no or weak food restrictions. 67% of elementary, 76% of middle and 83% of high school students attend schools with no or weak beverage restrictions.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	The USDA should establish nutrition standards for all foods sold regularly on school grounds outside of the school meal programs. It should also establish nutrition standards for all beverages sold on school grounds. Policies and practices that ensure effective implementation of the standards should be adopted by the USDA
Impact of HIA on subsequent decisions and/or affected populations	HIA findings have been presented to congressmen and the department of agriculture and have been received positively. The only negative response to the HIA has been from the National School Boards Association, which feels that the financial analysis presented in the report was not sufficient. The HIA team disputes this opinion. Results are still pending (final HIA published July 2012)
Cost and Funding Source for HIA	The HIA cost more than was initially budgeted and contracted. The contract was for \$150,000. Robert Wood Johnson Foundation and the PEW Health Group provided funding
Quantitative Results	None

Limitations	Lack of information about how food changes would impact the availability of student enrichment activities in circumstances where food sales funds are reported as school district enterprise revenue. Lack of information about the relationship between diet-related chronic illness and lost learning potential, as well as on the barriers to the policy at the district and school level. Self-reported consumption information from children is subject to recall and response bias. Consumption data gathered through observations may also be flawed. Data and research gaps were too big and complex to address within an HIA, with the exception of financial data analysis. Though there were some limitations in data, there were also instances where the scope of the HIA meant that there was an overwhelming amount of data. Additional time would have allowed for more in depth analysis
Peer Reviewed?	Yes

Table B.21: Health Impact Assessment: National Nutrition Standards for Snack and a la Carte Foods and Beverages Sold in Schools

General HIA Information (name, work group, location, year)	<i>HOPE VI to HOPE SF San Francisco Public Housing Redevelopment</i> ; University of California-Berkeley Health Impact Group; Berkeley, CA; 2009 (Seto et al. 2009)
Timeframe	Approximately 1 year
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	HOPE VI and HOPE SF housing redevelopment programs
Methods	Literature review, surveys and interviews with residents, management and stakeholders, data analysis, mapping. Retrospective analysis of HOPE VI, prospective analysis of HOPE SF
Scoping: Health determinants affected by the decision	Healthy housing and environmental health, displacement, public participation and social cohesion, youth programs and services, healthy eating and active living, crime and safety
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of North Beach Place and Bernal Dwellings (both HOPE VI sites) Disparities: spatial disparities in violent crime. Health disparities by race/ethnicity. Economic and social disparities. Vulnerable: low-income, young people, ethnic minorities, the elderly Qualitative: HOPE VI improved housing conditions and decreased exposure to environmental hazards, but residents still have high rates of chronic disease and stress. Many of the original residents did not return after redevelopment, which stressed social ties. HOPE VI and HOPE SF promote social interaction through community centers, and resident volunteerism is high. Resident diversity has also increased. The HOPE VI redevelopment decreased crime, though there is still concern over gang-related activity and police harassment. The HOPE VI sites have community kitchens and food pantries, but opportunities for physical activity are limited
Baseline health and socio-demographic profile of those impacted	28% of Bernal residents and 14% of North Beach residents have asthma. 20% of Bernal residents and 14% of North Beach residents are overweight or obese. The neighborhoods surrounding Bernal are more diverse than most in San Francisco, but the opposite is true for North Beach. Unemployment is greater in the neighborhoods surrounding Bernal than those surrounding North Beach. North Beach has higher household incomes than Bernal.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	For the HOPE VI sites: Coordinate with SF Department of Public Health for improved health care services and access to health insurance; outreach to local clinics to promote better use of available services to address health disparities in public housing populations; smoking cessation programs should be explored; coordinated exercise programs for residents should be encouraged; encourage integration of public housing residents with the neighboring communities. For the HOPE SF site: residents and stakeholders should participate in discussions of how to improve health; public housing and surrounding residents should be able to participate in the planning process to consider health challenges and opportunities
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	CDC; cost not reported
Quantitative Results	None
Limitations	Lack of pre-redevelopment data. Study may include selection bias as authors were not allowed to go door-to-door to recruit residents (for surveys). Instead, residents were recruited at places such as the food pantries and other service areas. The two HOPE VI sites may not be generalizable to other sites. Outdated 2000 and 1990 census data were used because the 2010 census data were unavailable
Peer Reviewed?	Yes

Table B.22: HOPE VI to HOPE SF San Francisco Public Housing Redevelopment

General HIA Information (name, work group, location, year)	<i>Merced County General Plan Update</i> ; Golden Valley Health Centers; Merced County, CA; 2009 (Sullivan 2009)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	General Plan Update Preferred Growth Alternative Decision
Methods	Rapid HIA
Scoping: Health determinants affected by the decision	Access to retail and services, preservation of agricultural land and agricultural jobs, community safety issues, water quality and availability, and climate change and air quality
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Merced County Disparities: N/A Qualitative: residential growth in existing urban areas will put residents at decreased risk for chronic disease related to obesity and motor vehicle accidents. The development of new towns might increase residential building with limited access to goods and services over the next 10-30 years. Because goods and services will be closer to residential communities in existing urban areas, vehicle use will decline, which will decrease the amount of vehicle-released pollutants and decrease effects on climate change. Growth in existing urban areas would preserve agricultural land; local agriculture will increase jobs and access to locally produced foods, and will promote mental, physical and social health. The development of new towns would decrease agricultural land and could lead to less agricultural jobs and local food. Development in existing urban areas may lead to a decreased sense of isolation, and allow for fast emergency response times. New towns will likely increase social isolation and increase emergency response times. Development in existing urban areas will have less impact on limited water resources than growth in new towns, and will also require less construction of new water and sewage infrastructure
Baseline health and socio-demographic profile of those impacted	Merced County accounted for the largest portion of California foreclosures in July, 2008. At the time the HIA was prepared there were 24 separate urban centers designated by Merced County, and 4.8 dwelling units people per acre in the county. In 2000, there were 50,839 acres of undeveloped land within city spheres of influence in Merced County. 19% of urban and built-up land is currently located outside of the city spheres of influence. From 2005-2007 the median household income was \$44,141. 16.1% of families were below the poverty line. The unemployment rate was 16.7%. 67% of adults in Merced County are overweight. In 2007, the county had the 4th highest asthma prevalence in the state
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Focus population growth and development in areas where there is existing urban development, infrastructure and municipal services to promote better health outcomes. Authors support a Tax Revenue Sharing Agreement between Merced County and six cities
Impact of HIA on subsequent decisions and/or affected populations	Decision-makers chose not to support the healthier development option, despite the findings of the HIA and public comment favoring the healthier option
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	No

Table B.23: Merced County General Plan Update

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment: Point Thomson Project; State of Alaska HIA Program; North Slope Borough, AK; 2011 (Anderson 2011)</i>
Timeframe	4-6 months
Incorporated into EIA/other assessment?	Yes
Proposed policy, plan, program or project	ExxonMobil development of the Thomson Sand reservoir: 5 Alternatives: (A) No action, (B) Applicant's proposed project, (C) Inland pads with gravel access road, (D) Inland pads with seasonal ice access road, (E) Coastal pads with seasonal ice roads
Methods	Rapid HIA; focus group, stakeholder meetings
Scoping: Health determinants affected by the decision	Social determinants of health (psychosocial, domestic violence, gender issues), accidents and injuries, exposure to potentially hazardous material, food, nutrition and subsistence activity, infections disease, water and sanitation, non-communicable and chronic diseases, health services infrastructure and capacity
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Residents of the North Alaskan Slope Disparities: Vulnerable: Alaskan Natives Qualitative: Alternative A would not result in cumulative health effects. Alternative B has the potential to increase exposure to hazardous materials, introduce negative impacts on reduced consumption of subsistence resources, and introduce negative impacts on social determinants of health such as change in depression/anxiety prevalence. It might introduce a positive impact on the number and quality of health care clinics and staff, as well as the number of services available and accessibility to service providers. Alternative C would increase exposure to hazardous materials, introduce negative impacts on reduced consumption of subsistence resources, increase traffic accidents and injuries, introduce negative impacts on social determinants of health such as a change in depression/anxiety prevalence and cause negative impacts on utilization/clinic burden from non-resident influx due to accidents and injuries (though if more clinics are built, the change would be positive). Alternative D would increase exposure to hazardous materials, introduce negative impacts on reduced consumption of subsistence resources, increase traffic accidents and injuries, and potentially burden health clinics with non-resident influx due to increase in accidents and injuries. Alternative E would increase exposure to hazardous materials, increase accidents and injuries, introduce negative impacts on reduced consumption of subsistence resources, and cause negative impacts on social determinants of health such as a change in depression/anxiety prevalence. It might also increase the number of health care clinics and staff, the number of services available, and accessibility to service providers.
Baseline health and socio-demographic profile of those impacted	83% of the population is Alaska Native, with Anaktuvuk Pass and Nuiqsut being the communities with the greatest Alaska Native population (90%). The North Slope Borough is comprised of Kaktovic, Nuiqsut, Anaktuvak Pass, Prudhoe Bay, Barrow, Atqasuk, Wainwright, and Point Hope. Kaktovic has a young population, high rates of unemployment and underemployment and a high ratio of dependents to wage earners. The Anaktuvuk Pass has high unemployment and underemployment rates and limited economic and employment opportunities. Barrow is 65% Alaska Native and 35% non-native, and has a high ratio of dependents to wage earners. Atqasuk is 94% Alaska Native or part Native. Wainwright is 93% Alaska Native or part Native. In the Arctic Slope Service Area, cancer, unintentional injury and heart disease were the leading causes of death (2000-2004). 38.1% of Alaska Native children (2-5 years old) are overweight. 42% of patients with a current BMI assessment on record are obese or overweight, and 13.4 percent of Alaska Native high school students are overweight
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	The proposed EPA regulation on stack emissions should be followed (for alternatives A, B, C, D, E); ExxonMobil should increase community education about safety measures in place for arctic projects (for alternatives B, C, D, E); Restricted access, increased security and safety patrols, speed enforcement, seatbelt requirements (for alternatives B, C, D); Response plan for augmentation of existing health care infrastructure in local clinics (For alternatives B, C, D)
Impact of HIA on subsequent decisions and/or affected populations	Human health was considered

Cost and Funding Source for HIA	Cost \$50,000
Quantitative Results	None
Limitations	The HIA does not address occupational health concerns nor does it evaluate the global implications of Alaskan development (i.e. climate change). Data gaps existed, specifically those related to human consumption of subsistence resources
Peer Reviewed?	No

Table B.24: Health Impact Assessment: Point Thomson Project

General HIA Information (name, work group, location, year)	<i>Spokane University District Pedestrian/Bicycle Bridge Health Impact Assessment</i> ; City of Spokane and the Spokane Regional Health District; Spokane, WA; 2011 (Dewey et al. 2011)
Timeframe	5 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Pedestrian bridge in the University District
Methods	Rapid HIA; community survey, data analysis and collection, literature review, site area observations
Scoping: Health determinants affected by the decision	Physical safety, physical activity, perceived safety, social capital, economic development, air quality
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents who live, work, and recreate within a 1/4 mile radius of the bridge Disparities: Vulnerable: elderly Qualitative: The bridge will result in higher costs per square foot of real estate, reduced vacant space, and increased business revenue due to increased foot traffic. Increased foot traffic will also result in an increase in safety
Baseline health and socio-demographic profile of those impacted	99 people live in the study area. The average age is between 41 to 62 years. Six residents are under the age of 18. Population is mostly white. 78 out of 102 housing units in the study area were occupied (at the time of the 2010 census). Census data available only at the block level: there are 391 households, 66% reported an income of \$24,999 or less. 25% of the households reported making less than \$10,000. 15.9% of students who responded to a questionnaire reported walking, biking, and/or taking public transit to campus
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Reduce the availability of on- and off-street parking to encourage alternate forms of transportation. Provide zoning that allows and provides incentives for mixed-use residential/retail/office. Ensure there are bike lanes to, from and on the bridge. Ensure regular bus service, and provide covered bus stops. Ensure sidewalks are properly maintained and repaired. Provide maps and signs that direct bicycle and pedestrian commuters to shortest and safest routes to destinations. Provide alternative transportation incentives. Implement traffic calming strategies. Continue to "brand" the University District, especially the South University District Revitalization Area
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Funded in whole or in part by funds made available through the American Recovery and Reinvestment Act, and by the CDC through a partnership with the WA State Department of Health
Quantitative Results	There will be a 13% increase in bicycle commuting for students and employees of the Riverpoint campus. Pedestrian and bicycle collisions with vehicles will likely increase by 18%. There will be an 18% increase in bicycle and pedestrian trips among residents. There may be an average reduction in carbon dioxide by between 0.62-0.69 lbs. per person per week, and a reduction in particulate matter by 2.3 kilos. Residents and employees could reduce single occupancy vehicle trips by 18.1%
Limitations	Lack of previous study evidence led to an unknown magnitude of impact on social capital. There was also a lack of research quantifying the impact of pedestrian and bicycle bridges on the economies of the immediate area, which hindered analysis
Peer Reviewed?	Yes

Table B.25: Spokane University District Pedestrian/Bicycle Bridge Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Mass Transit Health Impact Assessment: Potential Health Impacts of the Governor's Proposed Redirection of California State Transportation Spillover Funds</i> ; UCLA School of Public Health; CA; 2008 (B. L. Cole et al. 2008)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Reallocation of \$1.3 billion in spillover funds from mass transit programs throughout the state
Methods	Review of state budget documents, literature review, consultation with experts in transportation
Scoping: Health determinants affected by the decision	Air, water and noise pollution; economics; land-use; physical activity; discretionary time; social capital
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of California Disparities: Children, the elderly, those living near roads with high traffic volumes, and minority populations are all disproportionately affected by air pollution Qualitative: Reductions in mass transit funding might encourage some residents to walk. However, it might also cause problems for low-income families who live far from goods and services. It also might cause increased noise pollution, as well as increased driving and traffic. Improvements to the mass transit system may lead to improved levels of physical activity in communities. Reductions in transit can limit access to healthcare and other services, especially for vulnerable populations. Public transit can promote social interaction/social capital
Baseline health and socio-demographic profile of those impacted	Transportation-related public health costs for L.A. were \$1,807,866,900; Riverside-San Bernardino: \$217,794,588; Sacramento: \$185,595,200; San Diego: \$417,448,675; San Francisco: \$556,357,638; San Jose: \$249,879,000. Almost 26% of Californians report no physical activity. In San Francisco County, 17% of the population reports no physical activity, in Los Angeles County this number is 26%. 90% of adults in San Francisco County report having walked for transportation, recreation or exercise, compared to 79% of adults in LA County. 28% of residents from disadvantaged areas in Alameda County have transit access to a hospital. 20% of residents in low-income areas in Contra Costa County have transit access to a hospital, 33% have transit access to a community clinic, and 39% have walking access to a supermarket. 15% of California's urban population is living below the federal poverty line
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Decision makers should use the results of the HIA to lessen negative health impacts and maximize positive health impacts that will occur as a result of the reallocation of funds
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Not reported
Quantitative Results	N/A
Limitations	Not reported
Peer Reviewed?	No

Table B.26: Mass Transit Health Impact Assessment: Potential Health Impacts of the Governor's Proposed Redirection of California State Transportation Spillover Funds

General HIA Information (name, work group, location, year)	<i>Pittsburg Railroad Avenue Specific Plan Health Impact Assessment</i> ; Human Impact Partners; Pittsburg, CA; 2008 (Bhatia 2008)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Pittsburg Railroad Avenue Specific Plan
Methods	Focus group, literature review, data analysis, mapping, field visits/site observations, interviews with residents, city officials and stakeholders, modeling
Scoping: Health determinants affected by the decision	Healthy housing, livelihood, transportation systems, retail goods and public services, air quality, and community noise
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Pittsburg Disparities: Vulnerable: minorities, low-income residents Qualitative: the plan will provide a modest contribution to unmet affordable housing needs, but will contribute to ethnic and socioeconomic cohesion with potential indirect benefits on crime and safety. The plan might lead to increases in current rents and cause displacement of the low-income population. It might also pose moderate health risk due to air quality, pedestrian safety, and noise from having housing located close to a busy road. Employment opportunities will increase, though not all new jobs will be optimal for health promotion. The plan would increase physical activity, but would also increase vehicle trips (modestly), and could increase the rate of pedestrian-vehicle collisions. The plan may increase neighborhood completeness, which would support nutrition and physical activity, and it might also result in decreased crime. The plan might increase commercial property value, which could lead to current retail business displacement. There will be substantial air pollution exposures for the future plan area
Baseline health and socio-demographic profile of those impacted	Pittsburg residents are: 32.2% Latino, 31.2% white, 19% black, 13% Asian. There is a deficit of affordable housing, with only 46% of the very low-income allotment required by regional housing goals. The median income of residents is \$55,000, and 5% of residents are unemployed. 8.4% of residents commute to work via public transportation
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Designate at least 40% of the housing units as affordable with 16% for low income, 15% for very low income, and 9% for extremely low income; Protect current federally subsidized units from conversion to market rate; Unbundle parking from the sale of units; Offer a means-tested rental voucher program; Include adequate ventilation in residential design; In construction, use materials free of chemical risks to workers or residents; Within project developed green and open space, create community spaces that invite social cohesion;. Ensure that project approval requires employees working in short-term construction jobs and long term jobs in commercial, retail and manufacturing be provided a self-sufficiency wage, health insurance and paid sick days; Ensure that a development agreement requires the project sponsor to maximize employment opportunities for Pittsburg residents; Assess and prevent potential business displacement; Provide frequent and widely available bus service to the new BART station; Provide incentives for large employers to provide shuttle services; Conduct a retail diversity needs assessment; Implement a residential parking permit scheme; Ensure secured bike parking at the BART station; Ensure that sidewalk widths published in the Specific Plan are minimum requirements; Implement traffic calming measures at high traffic points; Leverage the economic impacts of the project to provide tax incentives or interest-free loans to stimulate local entrepreneurship; Prohibit a concentration of liquor stores and unhealthy food establishments; Locate residential uses and other sensitive land uses in the project area at a safe distance from heavily used roadways; Implement a design that has interior courtyards and patios that open into acoustically protected areas
Impact of HIA on subsequent decisions and/or affected populations	The HIA resulted in the approval of the Station Area Plan by the Pittsburg City Council. The results of the HIA were used by the Planning Department to save affordable housing sites. Advocates convinced members of City Council and the Planning Department to keep an affordable housing site near the proposed BART station. The HIA also resulted in the inclusion residents in the process and a partnership with a local health clinic
Cost and Funding Source for HIA	The California Endowment; cost not reported

Quantitative Results	15% of affordable housing needs will be met. Noise levels at the project's residential and retail near the BART station are estimated to be over Ldn 75dBA. There will be an additional 13,060 daily vehicle trips, 4,143 of which will be from the new residential units. The plan would encourage about 3,883 people to get at least 30 minutes of physical activity on a daily basis. Risk of lower respiratory symptoms due to air pollution exposure will increase by 3.8% for new residential uses in the Railroad Avenue Specific Plan located near SR4 (arterial). Without noise mitigations, 17% of the exposed population would be awakened by noise from trains
Limitations	Data limitations
Peer Reviewed?	Yes

Table B.27: Pittsburg Railroad Avenue Specific Plan Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Aerotropolis Atlanta Brownfield Redevelopment Health Impact Assessment</i> ; Center for Quality Growth and Regional Development at the Georgia Institute of Technology; Hapeville, GA; 2011; © (Ross et al. 2011)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Redevelopment plans for the site of the former Hapeville Ford Assembly Plant. Plan is to add 3 million sq. ft. of office, hotel, shopping, and airport parking facilities, in addition to a solar energy component
Methods	Stakeholder input (meetings and a survey), pedestrian and bicycle latent demand scores, healthy places audit of ordinances and plans in study area, walkability audit, GIS analysis, review of Aerotropolis plans, data analysis, literature review
Scoping: Health determinants affected by the decision	Safe, active, multimodal transportation environments; economic activities and opportunities; community preservation and revitalization; environmental exposures; overarching issues
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Future and current residents and visitors of Aerotropolis, Hapeville, Atlanta and Clayton Disparities: economically disadvantaged communities experience health disparities. Individuals with disabilities, the elderly, females, travelers and migrants are more vulnerable to unemployment Qualitative: Aerotropolis will have small blocks, which will promote connectivity in some areas, but connectivity will decrease in others. Physical activity may be increased for site users, providing bike and pedestrian infrastructure is convenient, safe and well-maintained. As a result of mixed-use development, walking, cycling and public transportation trips will likely increase. The new development will increase traffic, which could lead to an increase in exposure to air and noise pollution. It will also increase retail space, services, and the number of employment opportunities, and elevate property values once the brownfield site is remediated. It might lead to less availability of affordable housing. If Aerotropolis is not well integrated with surrounding communities, and doesn't increase amenities that residents have access to, then property values may decline. The commercial and public spaces created by the new development will promote social capital, potentially leading to a decline in crime
Baseline health and socio-demographic profile of those impacted	The median household income is \$50,834. Death rates in the study area are 30% higher than for Georgia. ER visits in the study area are 23% higher than for Georgia. Deaths from hypertensive and chronic ischemic heart disease, stroke, HIV, and homicide are also higher in the study area than in Georgia. In addition, the study area has higher morbidity rates of unclassified heart disorders, septicemia, HIV, asthma, kidney disease and mental disorders. Within the study area, there are a higher percentage of black and Hispanic residents than in the state, educational levels are lower, and disability and poverty rates are higher. 21.4% of Fulton County residents and 41.5% of Clayton County residents were obese in 2009. 36% of deaths resulted from heart disease, stroke, hypertension and diabetes in the study area from 1998-2007. From 2001-2010 there were 7705 motor vehicle crashes, which resulted in 2989 injuries and 33 deaths. From 2005-2009, the median value of homes in the study area was \$124,833.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Utilize mixed-use development. Promote walking and cycling by creating a human-scaled city. Provide high-end and affordable housing in each district. Streets should be safe, well maintained, and should have good pedestrian and bicyclist infrastructure. Shuttles and transit service should be available. Provide public spaces and places. Implement noise and air pollution reduction strategies
Impact of HIA on subsequent decisions and/or affected populations	Impact report to written in 2012-2013
Cost and Funding Source for HIA	Health Impact Project; cost not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.28: Aerotropolis Atlanta Brownfield Redevelopment Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment 2010 Hawai'i County Agriculture Development Plan</i> ; The Kohala Center; Hawai'i Island, Hawai'i; 2012 (E. Cole et al. 2012)
Timeframe	21 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	3 policy recommendations for the Hawai'i County Agriculture Development Plan (institutional buying, commercial expansion of food agriculture, home production)
Methods	Stakeholder meetings, internet survey, literature review, data analysis
Scoping: Health determinants affected by the decision	Food security, obesity, food-borne illness, economy, well-being and cultural connectedness
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Hawai'i Island Disparities: Native Hawaiian, rural and lower income people have higher rates of obesity. Native Hawaiians and other Pacific Islanders have shorter lifespans compared to other ethnic groups in the US Qualitative: expansion of institutional purchasing would improve food security and nutrition and create jobs on Hawai'i Island. In the long run it would have a small, positive effect on the prevention of childhood obesity, but a negligible effect on food-borne illness. Increased production of fresh food for the local market would also improve food security and nutrition and create jobs, and has the potential to decrease obesity rates. It would produce negligible effects on food-borne illness. Promotion of home gardening would positively impact food security and nutrition, increase consumption of fruit and vegetables, increase physical activity, potentially decrease the number of cases of food-borne illnesses, and increase community cultural connectedness
Baseline health and socio-demographic profile of those impacted	Hawai'i Island has 185,079 residents. The island accounts for 63% of farmland and 40% of existing farm employment in Hawaii. Almost 25% of residents are food insecure. 14.5% of Hawai'i County residents had incomes less than 100% of the federal poverty level in 2009. The unemployment rate for Hawai'i island in 2011 was 9.2%. 8.1% of residents are uninsured (compared to 4.6% of state residents)
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Enable farm-to-school programs to buy more local produce, and utilize funds available under the USDA's Fresh Fruit and Vegetable Program to purchase local produce; increase the amount of food grown for the local market; increase home, school, and community gardening; Modify Act 175 SHL 2009 to remove barriers to the procurement of locally grown produce by schools; The DOE should pilot at least one salad bar by 2013; Independent and charter schools should pilot food delivery systems to increase the amount of locally grown food in their lunch programs; the DOE and the University of Hawai'i should increase support for agricultural career pathways; Hawai'i County should work to increase the acceptance of cash vouchers, EBT, and credit cards at farmers markets. Hawai'i state, counties, USDA and the private sector should collaborate to expand capacity of harvesting, marshaling, processing and distribution facilities to support local agriculture; Landowners and farmers should research and create model legal structures to make small public and private land parcels available to those who want to farm (family-scale); the Hawai'i County Council should enact legislation allowing for a set-aside of land for community gardening in county parks and in all Section 8 housing, senior housing, or other publicly subsidized housing developments
Impact of HIA on subsequent decisions and/or affected populations	Pending (some impacts will not be monitored until 2013)
Cost and Funding Source for HIA	The Health Impact Project; cost not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.29: Health Impact Assessment 2010 Hawai'i County Agriculture Development Plan

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment of a Cap-and-Trade Framework</i> ; California Department of Public Health; CA; 2010 (Anon 2010)
Timeframe	1 year
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	California Cap-and-Trade regulations (Case 1: cap-and-trade system with 49% offsets. Case 2: offsets are not permitted)
Methods	Stakeholder meetings, data analysis, literature review
Scoping: Health determinants affected by the decision	Air pollution, employment changes and changes in income, changes in household energy costs, offset program co-benefits and impacts, and co-benefits associated with allowance revenue distribution
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Population of California, specifically looked at Wilmington-Harbor City-San Pedro Community, Richmond, and San Joaquin Valley Disparities; low-income populations, young children and the elderly, and socioeconomically disadvantaged communities of color Qualitative: Both negative and positive health effects resulting from a cap-and-trade program are expected to be negligible to minor. Net changes in employment are expected to be minimal. Health effects from changes in energy costs: Increases in energy costs can increase residential fuel costs, putting increased strain on a limited household budget, household stress, and a greater risk for heat-related morbidity during heat waves; improved air quality. Co-benefits associated with offset projects are expected to be positive, small and localized. Positive effects associated with urban forestry include impacts on air quality, heat exposure and cardiovascular disease. Health effects associated with ozone depleting substances and manure management practices are likely positive, but less so than urban forestry. Offset projects in California will spur employment opportunities, positively impact air quality, reduce urban heat islands, and improve environmental quality
Baseline health and socio-demographic profile of those impacted	The income per capita in California is \$46,060. In 2009, the unemployment rates were: 8.5% for whites, 7.3% for Asians, 12.1% for Hispanics, 14.8% for African Americans, with an average of 9.3% for all races. WHCSP community is an environmental justice community, with high levels of air pollution. Residents are ethnically and financially diverse. Heart disease is the leading cause of mortality. Richmond is economically and racially diverse, and is exposed to air pollution, high poverty rates, high crime rates, and low high school graduation rates. Like WHCSP, heart disease is the leading cause of mortality. San Joaquin Valley is a large area with an agricultural economy. It has a diverse population, and many of the same health risks as California
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Health impacts will be slightly greater for Case 2, so mitigation of potential adverse health impacts will be more important if this is chosen. Mitigation efforts should target low-income populations and assist in transitioning to higher fuel costs while meeting core program goals of energy efficiency and conservation. Efforts should be taken to develop offset projects in California, particularly in vulnerable communities. A portion of allowance revenue should be devoted to worker transition assistance. A portion of allowance revenue should be used to fund household energy efficiency programs and subsidize utility costs in low-income communities. Improve statewide surveillance of environmental health risks and related health outcomes. Dedicate a portion of allowance revenue to building healthier community environments and improving health in disadvantaged and vulnerable communities. Limit the overall use of offsets to ensure the majority of positive air quality impacts occur within California borders and encourage offset projects with health co-benefits (urban forest in particular) within California, while targeting vulnerable communities.
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Health Impact Project; cost not reported
Quantitative Results	None
Limitations	Limited local economic and health data did not allow for a community-level analysis of health determinants. Limited ability to geographically identify local economic and air quality impacts and resulting health effects
Peer Reviewed?	No

Table B.30: Health Impact Assessment of a Cap-and-Trade Framework

General HIA Information (name, work group, location, year)	<i>Page Avenue Health Impact Assessment; Washington University; Pagedale, MO; 2010 (Hoehner et al. 2010)</i>
Timeframe	17 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Page Avenue redevelopment
Methods	Survey, focus groups, community events, steering committee, literature review, data analysis, mapping, food store audits, key informant interviews, open house
Scoping: Health determinants affected by the decision	Employment, access to goods, services and recreation, access to healthy foods, pedestrian safety, community safety, community identity, housing
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents in Pagedale and surrounding communities in University City and Wellston Disparities: the zip codes where redevelopment is occurring and where the Normandy School District is located are ranked in the top third for early death due to obesity-related chronic diseases. African Americans in the study area have a higher prevalence of risk factors for chronic disease than the white population Qualitative: Redevelopment will increase opportunities for employment. It will promote nutrition benefits as a result of the full-service grocery store, and has the potential to promote physical activity by improving sidewalk infrastructure. It will also present the opportunity to decrease crime by increasing street lighting, and thereby increase social cohesion and interaction among residents. The opportunity to create a positive community identity will also be present. Redevelopment will increase the number of homeowners and renters that are supported with social services through Beyond Housing. There will also be the opportunity to build apartment style housing and townhouses, as well as affordable senior housing. A potential negative impact is related to the relocation of businesses and homes, but negative effects should be minimal due to fair compensation of owners
Baseline health and socio-demographic profile of those impacted	In the Normandy School District, from 2006-2008, 21% of residents lived in poverty, 95% identified were black or African American, and the unemployment rate was 13%. Between 2000 and 2007, Pagedale and its surrounding communities were in the upper tertile of cardiovascular and diabetes death rates for persons aged 45-64 in the St. Louis region. In Pagedale, the prevalence of self-reported physical activity and healthy eating were found to be low
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term. Implement orchards and gardens. Supplement physical improvements with education and programming. Prioritize spaces and programs for youth recreation. Foster stakeholder engagement
Impact of HIA on subsequent decisions and/or affected populations	Results are pending. As a result of the HIA, transportation and planning decision-makers became more aware of the redevelopment and Beyond Housing's leadership in the community. These decision-makers committed to improving sidewalks near transit stops and offered their expertise to Beyond Housing/City of Pagedale. The County Health Department and the Pagedale mayor agreed to allow a staff person and a city council member to serve on the post-HIA task force. The HIA raised awareness of the impacts of policies on health among local and regional government staff. It also raised awareness of the HIA tool among university affiliates and local/regional decision-makers, and formed relationships between decision-makers from different sectors and organizations. A fruit orchard/garden city initiative arose, and the community gained access to community information. New methods and tools for assessing baseline priorities and perceptions of community well-being and health impacts related to redevelopment were established. An initiative (24:1 Initiative) is planned to build upon this HIA
Cost and Funding Source for HIA	Washington University Center for Social Development, Alvin J. Siteman Cancer Center, and Institute for Public Health, and Active Living Research program of the Robert Wood Johnson Foundation. Cost not reported
Quantitative Results	None
Limitations	Time (i.e. collecting/analyzing data often took a long time, and took time away from other HIA activities; lack of time to seek feedback)
Peer Reviewed?	Yes

Table B.31: Page Avenue Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Assessment of Open Burning Enforcement in La Crosse County</i> ; La Crosse County Healthy Department; La Crosse, WI; 2011 (Hanson 2011)
Timeframe	5 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Uniform open air burning policy
Methods	Rapid HIA. Interviewed fire chiefs and town clerks, used health data from the 2010 US Census and the Burden of Asthma in Wisconsin
Scoping: Health determinants affected by the decision	Cost of disposal/fire penalties, cost of fire damage/fines, annoyance calls, respiratory health
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: population of La Crosse County Disparities: N/A Qualitative: Out-of-pocket and/or tax expenses may increase for residents, time investment to drop off trash will increase
Baseline health and socio-demographic profile of those impacted	113,679 people live in La Crosse County, 83% live in urban areas and 17% live in rural areas. 18,317 people are estimated to have respiratory concerns; 16% of the population is estimated to have, or to experience, a respiratory health concern
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Hold meetings between municipal stakeholders and respective fire chiefs to discuss strategies to increase/improve solid waste disposal services for residents with cost saving features. Utilize collected data to inquire with municipal stakeholders about how solid waste service decisions are made, and what barriers exist for cost containment and increased access for household waste. Solicit input from stakeholder groups with regard to resources and community venues available in each municipality to reach residents with education about solid waste disposal and burning rules. Use existing education materials and develop out of the box uses for application. Make the Town of Holland/Onalaska burn ordinance available to all township administrators. Invite all municipalities to post their solid waste services, schedules and burn policies on their websites. Work with fire chiefs in municipalities that did not respond to the initial survey. Recognize efforts through community venues and local media
Impact of HIA on subsequent decisions and/or affected populations	The HIA helped to confirm/update information that was compiled by the Solid Waste Department in 2010. A relationship between the Health Department, the fire district staff, and municipal administration was formed. A health educator will work with the Solid Waste Department's Sustainability Coordinator and municipalities to implement activities to assist with increased awareness of the negative effects of open burning, the opportunities for alternatives to current education, and waste disposal strategies
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Time constraint made it difficult to collect data. The time during which the HIA was conducted coincided with local municipal elections, which resulted in clerk/chairman changes. Not all communities were contacted due to lack of response to phone messages, lack of email access, absence of rural elected official. Lack of HIA experience
Peer Reviewed?	No

Table B.32: Assessment of Open Burning Enforcement in La Crosse County

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment of Gender Pay Inequity</i> ; Wayne County Department of Public Health; Wayne County, MI; 2011 (Stevenson et al. 2011)
Timeframe	6 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Gender pay equity policies
Methods	Preliminary HIA; literature review, data analysis
Scoping: Health determinants affected by the decision	Stress, change in work hours, nutrition, health care access, social and self-perception, housing, transportation, and education
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Women in MI Disparities: Women, especially women of color, lower-income women, and mothers Vulnerable: women and children Qualitative: Moving up income brackets and increasing income generally means that, on average, people's health will improve. Higher wages would reduce the effects of chronic stress, the likelihood for depression, and the rates of affective and/or anxiety disorders. These effects would also result in improved maternal and child health outcomes. With pay equality, the number of uninsured women and families would decrease, meaning the use of preventive services will increase, emergency department use will decrease, and health outcomes will improve
Baseline health and socio-demographic profile of those impacted	In 2009, the women's average income was \$34,452 compared to the men's average income of \$48,066. 17.7% of all women in Michigan were living below the federal poverty line; 31.2% of black women, 28.2% of Hispanic women, and 42.7% of single mother families were living below the federal poverty line. 41.9% of women in Michigan are the main income earner for their families; 21% are co-earners. 15% of women in Michigan are uninsured
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Pay equality is recommended, as is further research related to this topic. Proponents of pay equality should actively advocate for its adoption
Impact of HIA on subsequent decisions and/or affected populations	The HIA was used to support the Michigan Pay Equity House Bill 4851 and was held in high regard by law/policymakers. It has helped to promote the use of HIA as a tool in Michigan, which has led to an HIA on Governor Rick Snyder's performance-based policy
Cost and Funding Source for HIA	\$50,000 from the Human Impact Partners; original funding from W.K. Kellogg Foundation
Quantitative Results	If there were pay equity between male and female nursing and home health aides, women in those professions in Michigan would have an annual salary increase of 10%. A 49% increase would be seen by retail salespersons, 6% by teachers, and 30% by supervisors of retail workers
Limitations	Time, resources
Peer Reviewed?	No

Table B.33: Health Impact Assessment of Gender Pay Inequity

General HIA Information (name, work group, location, year)	<i>Red Dog Mine Extension Aqqaq Project Final Supplemental EIS</i> ; EPA; Northwestern Alaska; 2009 (Anon 2009e)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes
Proposed policy, plan, program or project	Red Dog Mine Extension Alternatives: Alternative A: no action, mining operations continue until 2011; Alternative B: applicant's proposed action, mining activities continue until 2031 and extend to the Aqqaq Deposit; Alternative C: concentrate and wastewater pipelines; Alternative D: wastewater pipeline and additional measures
Methods	Public scoping meetings
Scoping: Health determinants affected by the decision	General health; subsistence nutrition and diet related health problems; social and psychological health; injury; environmental contaminants and health
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: mine workers and residents in the surrounding communities Disparities: disparities exist between Alaska Natives and the non-Native population in all regions (higher suicide rates) Qualitative: closure of the mine will result in job loss, which could also result in the reduction of educational quality, and declined availability/quality of water and sewer systems. NWAB may not be able to provide residents with services and community infrastructure. Economic depression could lead to increases in heart disease, social problems and injury rates. Alternatives B, C and D would delay mine closure, which could result in less severe impacts from economic depression if NWAB and NANA plan ahead. Closure of the mine would result in less traffic, and could lead to a better subsistence harvest and increased nutrition. Under all alternatives, family members employed at the mine would be absent for extended periods of time, resulting in decreased interaction between children and the family member and possible increase in domestic violence and alcohol use. None of the alternatives would effect cancer rates. Air quality in locations containing communities would not be affected by mine activities. Decreased traffic caused by closure of the mine would result in less fugitive dust (containing lead and cadmium) exposure for those subsisting near the mine, road, and port site.
Baseline health and socio-demographic profile of those impacted	The leading causes of death for Alaska Natives are cancer, heart disease, injury, chronic obstructive pulmonary disease, cerebrovascular disease, and suicide. The obesity rate in the Maniilaq region is 25.4%, with 25.2% of children being overweight. In the NWAB, type II diabetes prevalence for Alaska Natives is 39/1000. Alcohol related deaths account for 7% of Alaska Native deaths. The unemployment rate for NWAB was 10.8%, and the suicide death rate was 81/100,000. The age-adjusted mortality for chronic lung disease is 49.8/100,000 and for pneumonia and influenza, it is 77.9/100,000
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Form a Stakeholder Participatory Monitoring and Review Committee to coordinate and collaborate health efforts and initiatives. The committee should consist of members from public health agencies such as ADHSS and Maniilaq Association, NANA, Teck, and the NWAB
Impact of HIA on subsequent decisions and/or affected populations	The EPA chose to use components of Alternative C and B to develop an Environmentally Preferable Alternative as a result of the SEIS. Specific components include three pipelines (Alternative C) and the closure plan (Alternative B). Alternative B was chosen as the preferred alternative. The EPA developed a final NPDES permit for treated wastewater discharge from the tailings impoundment to Middle Fork Red Dog Creek and for storm water to the tundra
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.34: Red Dog Mine Extension Aqqaq Project Final Supplemental EIS

General HIA Information (name, work group, location, year)	<i>Healthy T for a Healthy Region: Health Impact Assessment of Proposed MBTA Service Cuts and Fare Increases</i> ; Metropolitan Area Planning Council; MA; 2012 (Anon 2012b)
Timeframe	2 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Two sets of proposed changes to MBTA fares and services. Scenario 1: fares increase by 43%, service reductions affect 34-48 million trips/year. Scenario 2: fares increase by 35%, service reductions affect 53-64 million trips/year
Methods	Rapid HIA; examined the Central Transportation Planning Staff's estimates of how the scenarios would affect vehicle-miles traveled, time spent driving, air quality and ridership loss; literature review; consultation with experts
Scoping: Health determinants affected by the decision	Time spent and fuel burned in traffic, air pollution, physical activity, crashes, access to health care, carbon emissions, noise
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: transit users in MA Disparities: N/A Qualitative: The MBTA service cut and fare increase proposal would be damaging to the region and its residents' health
Baseline health and socio-demographic profile of those impacted	Adults in counties served by the MBTA are approximately 19% obese and 16% report no daily physical activity
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	No recommendations section
Impact of HIA on subsequent decisions and/or affected populations	Service cuts and fare increases were less severe than originally planned, though it is unclear if the HIA influenced this decision
Cost and Funding Source for HIA	Self-funded, \$15,000
Quantitative Results	Scenario 1 would result in \$137 million in lost time costs (annually), 0.18 additional deaths and 0.17 additional hospitalizations per year as a result of exposure to air pollution. This would result in \$1.5 million in medical costs per year. 30,400 people would shift from transit to driving, resulting in 250,000 fewer minutes of walking per day, 70 new cases of obesity per year, 9 additional deaths per year due to decreased physical activity, and \$75 million in lives lost per year due to decreased physical activity. There would be 0.79 new deaths due to automobile crashes per year, resulting in \$33.6 million increased costs per year. The scenario would result in the isolation of 550 transit-dependent households from basic health care resources. 500 additional people will be exposed to more than 60 dB of noise per day. Scenario 2 would result in \$185 million in lost time costs (annually), 0.26 additional deaths and 0.24 additional hospitalizations per year due to air pollution exposure. This would result in \$2.1 million in medical costs. 48,600 people would shift from transit to driving, resulting in 403,000 fewer minutes of walking per day, 120 new cases of obesity per year, 14 additional deaths per year due to decreased physical activity, and \$116 million in lives lost per year due to decreased physical activity. There would be 1.15 new deaths due to automobile crashes, resulting in \$48.8 million in increased costs per year. This scenario would result in the isolation of 2,200 transit-dependent households from basic health care resources. 2000 additional people would be exposed to more than 60 dB of noise per day
Limitations	Data constraints
Peer Reviewed?	Yes

Table B.35: Health T for a Healthy Region: Health Impact Assessment of Proposed MBTA Service Cuts and Fare Increases

General HIA Information (name, work group, location, year)	<i>Rapid Health Impact Assessment</i> ; Outagamie County Public Health Division; Greenville, WI; 2011 (Outagamie County Public Health Division 2011)
Timeframe	Less than one month
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Biosolids Storage Facility
Methods	Literature review, community forums, review of proposed design and operational strategies, review of stakeholder documentation, interviews with existing biosolids storage facilities in Outagamie County
Scoping: Health determinants affected by the decision	Pathogens, chemicals, odor, groundwater contamination
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Greenville Disparities: n/a Qualitative: If biosolids are produced at wastewater treatment plants with well-operated stabilization processes then they can be stored off-site without creating odor problems. Warm temperatures and high humidity, long storage times, and accumulated water and poor site management may lead to odor nuisances. If biosolids are handled in an appropriate manner and according to regulations, they should not result in a human health hazard
Baseline health and socio-demographic profile of those impacted	Population of 10,467
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	The Neenah-Menasha Sewerage Commission should monitor and respond to resident complaints. Biosolids-related health complaints should be monitored so that trends or other indicators of adverse health effects can be recognized and investigated in a timely manner
Impact of HIA on subsequent decisions and/or affected populations	The Biosolids Storage Facility was cancelled soon after the release of the HIA. A petition against the facility was signed by over 1,000 residents. It is unclear how much of an influence the HIA had on these outcomes
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Limited timeframe did not allow for additional water quality research to be conducted, and resulted in the HIA having a narrow scope
Peer Reviewed?	No

Table B.36: Rapid Health Impact Assessment: Outagamie Biosolids Storage Facility

General HIA Information (name, work group, location, year)	<i>Strategic Health Impact Assessment on Wind Energy Development in Oregon</i> ; Office of Environmental Public Health; 2012 (Joshi et al. 2012)
Timeframe	15 months to complete public comment version; still working to incorporate public comments
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Wind farms
Methods	Community listening sessions, online questionnaire, literature review
Scoping: Health determinants affected by the decision	Sound, visual impacts, air pollution, economic effects, community conflict
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Residents of Oregon living near potential wind farm sites Disparities: Socioeconomic status disparities exist between urban and non-urban areas. Residents in non-urban areas have lower levels of income, lower wages, and higher rates of unemployment Qualitative: Sound from wind energy facilities might impact people's health if background sound levels are increased by more than 10dBA, or results in long-term outdoor sound levels greater than 35-40dBA. Increased noise could cause annoyance, sleep disturbance and decreased quality of life. Shadow flicker from the turbines is unlikely to cause adverse health impacts. Wind energy facilities may lead to positive health impacts by reducing emissions of GHGs and other air pollutants. Construction related air pollution will have minimal health impacts. Wind farms may increase local employment, personal income, and community-wide income and revenue
Baseline health and socio-demographic profile of those impacted	N/A
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Planners/developers should evaluate and implement strategies to minimize wind turbine noise. They should consider the distance, orientation and placement of turbines relative to homes and buildings to prevent or block shadow flicker. Vegetation or blinds should be used as barriers to shadow flicker after wind turbines are installed. Mechanisms that link the development and integration of wind energy for electricity consumption to reductions in fossil fuel use should be implemented. Planners/developers should consider strategies to reduce diesel emissions from non-road construction equipment. Community-wide economic benefits from wind energy developments should be promoted by strategies to be decided by local officials, decision-makers and other stakeholders. Planners, developers, decision-makers, and government agencies involved in siting decisions should use strategies to anticipate, understand and manage conflict and stress in communities near proposed developments
Impact of HIA on subsequent decisions and/or affected populations	Impact on subsequent decision still pending. Local elected officials have written to the HIA team. The state Energy Facility Siting Council has been involved with the HIA and shows an interest in the report findings. The HIA resulted in increased awareness, interest and support for HIA within the Public Health Division
Cost and Funding Source for HIA	Association of State and Territorial Health Officials, CDC
Quantitative Results	None
Limitations	Limited scientific information, limited staff time/resources. Limited evidence in: epidemiological studies on wind turbine sound, amplitude modulation of wind turbine sound, indoor low frequency sound impacts from wind turbines. Uncertainty in findings is present due to differences among people and they way they respond to sound
Peer Reviewed?	Yes

Table B.37: Strategic Health Impact Assessment on Wind Energy Development in Oregon

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment Report Alcohol Environment- Village of Weston, WI; Marathon County Health Department; Weston, WI; 2011 (Anon n.d.)</i>
Timeframe	6 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	No specific policy; strategies to limit liquor licensing (specifically Class A) practices at the municipal level
Methods	Rapid HIA; literature review, data analysis, focus groups, community surveys, stakeholder interviews, GIS mapping
Scoping: Health determinants affected by the decision	Drinking and driving, underage drinking
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Residents of Weston Disparities: Vulnerable: low-income population Qualitative: A moratorium of new licenses could cause a decrease in the proportion of outlets per resident in Weston, given population growth. A reduction in the amount of alcohol available would positively influence drinking and driving rates and youth drinking rates
Baseline health and socio-demographic profile of those impacted	14,868 residents; 87.7% Caucasian, 8.7% Asian, 2.0% Hispanic. 73% of the population is over the age of 18. Marathon County's median income level is \$54,649, slightly higher than the state's median. The county experiences higher rates of alcohol use among adults 18 and older, binge drinking among adults 18 and older, and alcohol-related hospitalizations than the state average. The county alcohol-related liver cirrhosis death rate is 4.4, compared to the Wisconsin rate of 4.2
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	A moratorium on future Class A alcohol licenses; development of a Policy Exemption Committee; development of an Alcohol License Review Board; implementation of consistent health behavior surveys among youth; seek the support of the Marathon County Board of Health for future HIA projects within the county
Impact of HIA on subsequent decisions and/or affected populations	Built relationships to further the discussion about alcohol misuse prevention in the community. Resulted in the collection of data on existing conditions in Weston Village, which will be used in the future for grants, policy development and public awareness. A policy to limit the number of class A licenses or signage advertising alcohol around class A establishments has not been implemented. The staff person leading the initiative no longer works for the health department, and the Village Administrator has also left, both of which have reduced the amount of attention the issue receives
Cost and Funding Source for HIA	The WI Bureau of Environmental and Occupational Health-\$10,000
Quantitative Results	None
Limitations	Time restrictions: A lot of time is needed to complete a thorough assessment/literature review, but there is pressure from the community and policy makers to complete the HIA quickly. Data limitations: could not always find the data to support a suggested outcome. Elections shifted priorities and amount of time staff dedicated to the HIA project
Peer Reviewed?	No

Table B.38: Health Impact Assessment Report: Alcohol Environment- Village of Weston, WI

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment: Aberdeen Pedestrian Transportation Plan</i> ; the Town of Aberdeen and FirstHealth; Aberdeen, NC, 2011 (Buescher et al. 2011)
Timeframe	12 weeks
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Aberdeen Pedestrian Transportation Plan (AFTP)
Methods	Rapid HIA; Analyzed existing data sources, literature review, collected observational data during a windshield tour of Aberdeen, mapped children's activity spaces using ArcGIS, and gathered stakeholder input through interviews and surveys
Scoping: Health determinants affected by the decision	Physical activity (including recreation and active transportation to school)
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: children between 5 and 14 years old in Aberdeen Disparities: racial disparities in childhood overweight, with Mexican American boys and African American non-Hispanic girls showing the greatest prevalence. Vulnerable: minorities and those of low socioeconomic status Qualitative: sidewalks, parks, open spaces and recreational facilities increase physical activity in children. The AFTP is likely to have a positive impact on children's physical activity because it uses evidence-based strategies to change the built environment. It includes several recommendations from the Community Preventative Services Task Force to increase physical activity. The AFTP will improve access, connectivity, and safety by addressing the availability of walking trails, continuity and connectivity of sidewalks, traffic calming, and improved street crossings
Baseline health and socio-demographic profile of those impacted	Estimated median household income in Aberdeen is \$32,706, and the poverty rate is much higher for black residents than for white residents. 20% of children between the ages of 5-14 years in Moore County are obese; 16% are overweight. The prevalence of adult diabetes is 10.2%. More than half of Moore County adults are sedentary, and children rarely walk or bike to school
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Implement AFTP in a timely manner; publicize improvements to the pedestrian infrastructure to parents and children in the community; build a community coalition to start a Safe Routes to School program to advocate for pedestrian and bike-friendly policies and programs; enforce traffic laws and pedestrian laws to promote a culture of safety for pedestrians
Impact of HIA on subsequent decisions and/or affected populations	The HIA was used to support a grant proposal for a Safe Routes to School program. The results of the grant proposal are still pending. The Aberdeen Pedestrian Transportation Plan has not yet been implemented, so results regarding this are also still pending
Cost and Funding Source for HIA	No funding
Quantitative Results	None
Limitations	Limited timeframe, which restricted primary data collection and ability to perform complex quantitative modeling to predict health effects. Lack of literature on child activity and the built environment. Difficult to say with certainty that AFTP will have a measureable impact on long-term health outcomes of childhood overweight and obesity without examining other factors
Peer Reviewed?	No

Table B.39: Health Impact Assessment: Aberdeen Pedestrian Transportation Plan

General HIA Information (name, work group, location, year)	<i>Healthy Corridor for All: A Community Health Impact Assessment of Transit-Oriented Development Policy in Saint Paul, Minnesota</i> ; Policy Link; Saint Paul, MN; 2011 (Malekafzali & Bergstrom 2011)
Timeframe	11 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Transit-oriented development (TOD)/Rezoning proposal
Methods	Discussion with community advocates, technical advisers and policymakers, data analysis; literature review
Scoping: Health determinants affected by the decision	Healthy economy; affordable, healthy housing; safe and sustainable transportation
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Population of St. Paul residing in the Central Corridor Disparities: racial disparities exist in the Central Corridor. At least 50% of black, Hispanic/Latino, Asian or Pacific Islander households, or households headed by someone of two or more races, had an annual income less than \$30,000 (compared to 31% of whites). 56% of Asians and Pacific Islanders lack a high school degree (compared to 5% of whites). There are also unemployment disparities, which have the greatest affect on races other than whites, Asians, and Pacific Islanders. Vulnerable: low-income persons and communities of color Qualitative: Office space will significantly increase; retail will increase fairly moderately; up to 6,775 new residential units may develop along University Ave and within the station areas within the next 20 years; rezoning will result in thousands of additional jobs, but the number of higher-paying jobs for lower-educated workers will decrease over time; more vulnerable businesses may be displaced, and there will be less opportunity for growth in the manufacturing sector; Redevelopment, rising commercial rents due to property value increases, and loss of parking may occur as a result of rezoning, which would make small and minority-owned businesses vulnerable; Residential rent and property taxes will increase with rising property values; Neighborhoods will likely start gentrifying; increase in exposure to unsafe pedestrian infrastructure as a result of increased residential and employment density near station areas
Baseline health and socio-demographic profile of those impacted	53% of the population are persons of color. From 2005-2009, the estimated poverty rate in the corridor was 27%. Five of the county's (Ramsey) nine extreme poverty neighborhoods are located in the corridor. In several Central Corridor neighborhoods more than a quarter of the population is foreign-born. Approximately 56% of housing units are renter-occupied. There are 7.1 deaths per 1,000 live births, 17 asthma hospitalizations per 10,000 persons
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Develop a Community Equity Program to cover the cost lower-income housing on development sites close to proposed light rail stations. Codify the City's commitment to affordable housing by specifying housing objectives as a purpose of the Traditional Neighborhood zoning regulations that will apply to the Central Corridor. Develop a Density Bonus Program, which would provide incentives to developers who reserve a percentage of units/floor area for affordable housing. Relieve the lack of commercial parking. Create a First Source Hiring Program that requires construction contractors to notify the Saint Paul Human Rights and Equal Economic Opportunity Department or another comparable referral program of available job openings/descriptions
Impact of HIA on subsequent decisions and/or affected populations	The HIA resulted in increased community participation in the rezoning process, particularly from low-income people and communities of color. It helped to build relationships between advocacy groups, and ultimately resulted in the city council adding a resolution to create an affordable housing workgroup to identify a set of recommendations to preserve and enhance affordable housing options for city council consideration within 6 months. The HIA helped to involve community groups in the zoning debate, and also introduced health into the discussion
Cost and Funding Source for HIA	Health Impact Project, Blue Cross/Blue Shield Center for Prevention; cost not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.40: A Community Health Impact Assessment of Transit-Oriented Development Policy in Saint Paul, Minnesota

General HIA Information (name, work group, location, year)	<i>Health Impact Assessment on NMRT's Request for a Special Use Permit</i> ; Bernalillo County Place Matters Team; Bernalillo County, NM; 2011 (Richards & Suozzi 2011)
Timeframe	6 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Special use permit to locate a new dirty materials recovery facility (dirty MRF) in Mountain View. Requested by NMRT, LLC.
Methods	Rapid HIA; stakeholder meeting(s) minutes review, literature review, review of government documents
Scoping: Health determinants affected by the decision	Neighborhood livability, employment and economic development, traffic congestion (and impacts to injuries and fatalities), air quality, noise, odors, and vectors
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents of Mountain View and San Jose Disparities: Mountain View and San Jose have significantly higher death rates for 10 of 11 leading causes of death compared to surrounding communities. Life spans of residents in these communities are also shorter. Qualitative: the dirty MRF will not contribute to sustainability or community goals. It will lead to decreased neighborhood quality, increased poverty concentration, unavailability of quality jobs, higher stress levels, shorter life spans and increased death rates. Facility workers will be exposed to diesel exhaust, carbon monoxide, nitrogen oxides, noise and odors. An increase in heavy truck usage will likely result in an increase in the number of vehicle crash injuries and fatalities. It will also expose communities to decreased air quality, and will lead to an increased burden of chronic disease deaths and childhood asthma. Congestion and traffic delays will also increase, and will hinder emergency evacuation events. Children at a local school may experience immune, cardiovascular and neurological symptoms as a result of the combined noise produced by airplanes (local airport) and heavy truck traffic. Increased odors from the facility will cause increased stress, headaches and upper respiratory illness, and decrease residents' quality of life and well-being. The number of vectors (rodents, insects, birds, microbes) will increase, causing an increase in infectious diseases. This effect will be enhanced if waste is stored on-site overnight or shipped into the facility via rail car
Baseline health and socio-demographic profile of those impacted	Most residents of San Jose and Mountain View are low-income and Hispanic. Both towns are contaminated by VOC's, metals, and nitrates, and residents experience odors from a sewage facility. 93% of San Jose residents are Hispanic, 58% are living below 150% of the Federal Poverty Level, 35% are under the age of 18. 76% of Mountain View residents are Hispanic, 31% are living below 150% of the Federal Poverty Level, 28% are under the age of 18. In 2008, there were 4 non-fatal cases of hantavirus; in 2009, there were 2 fatal cases; in 2011, there was 1 fatal case. 10 cases of plague have occurred in Bernalillo County from 1990-2006 (there were 124 cases through the US)
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Deny the special use permit request for the dirty MRF
Impact of HIA on subsequent decisions and/or affected populations	The HIA contributed to the decision to deny the special use permit request. It was used by the legal counsel for US Foods, which had recently located to the Mountain View/San Jose area and felt that the dirty MRF was incompatible with their facility (a food distribution warehouse)
Cost and Funding Source for HIA	Human Impact Partners, W.K. Kellogg Foundation; most of the work was completed on a voluntary basis--the cost of the HIA was minimal
Quantitative Results	None
Limitations	Limitations in information provided by NMRT, LLC: inconsistencies in traffic projections, absence of data on types, numbers and age of fleet vehicles, incomplete information on the type of waste transport, waste volume, waste origin, and waste characterization
Peer Reviewed?	Yes

Table B.41: Health Impact Assessment on NMRT's Request for a Special Use Permit

General HIA Information (name, work group, location, year)	<i>The Health Impact Assessment of the Commonwealth Edison (ComEd) Advanced Metering Infrastructure (AMI) Deployment</i> ; National Center for Medical-Legal Partnership; Commonwealth Edison, IL; 2012 (Sandel et al. 2012)
Timeframe	20 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Advanced Metering Infrastructure
Methods	Stakeholder meetings, literature review, data analysis, surveys
Scoping: Health determinants affected by the decision	Fuel poverty, adequacy of housing, and AMI's enhanced 2-way functionality, unintentional injuries and premature deaths, vulnerability to heat or cold, and ambient air pollution
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: The residents of ComEd Disparities: African Americans have less access to central air-conditioning than whites, and therefore higher summer death rates. Vulnerable: the very young (birth to age 5), older individuals (65+), individuals with functional disability status including those with temperature sensitive conditions, individuals who are socially isolated, an individuals with limited English proficiency or literacy Qualitative: New pricing programs associated with AMI results in less electricity usage, decreasing fuel poverty and improving housing quality as a result. However, the flat rate pricing program (which is most likely to be used) results in higher electricity bills. The net cost of \$2-3 per month for the deployment of AMI will have a negative impact on vulnerable populations, including inability to pay for housing, health care and/or food, difficulty paying for heating/cooling, unreliable electricity for heat or to power medical devices, and foregoing needed healthcare. Dynamic pricing programs have the potential to decrease usage and reduce air pollution
Baseline health and socio-demographic profile of those impacted	18.9% Hispanic or Latino, 32.1% non-white. 28% of households consist of one person living independently. Median income is \$51,313. 11.8% of residents live in households earning less than federal poverty. 11.7% of residents are not proficient in English. Years of potential life lost due to death before age 65 is 6,383 YPLL per 100,000 population.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Analyze proposed terms of deployment with respect to clearly defined groups and at-risk residential customers, including an analysis of the likely impacts on health and safety. Proposed cost recovery from electric customers should link benefits and costs for vulnerable customers specifically, in addition to linking benefits that are documented and realized for all customers. Proposed time-based pricing programs for AMI should offer incentives for vulnerable households to optimize their use of electricity from the perspectives of health as well as of energy efficiency. The remote connection and disconnection functionality of AMI, especially in the case of involuntary loss of service for nonpayment, must be deployed to promote and not endanger the health and safety of vulnerable customers. Any AMI deployment and programs that seek customer engagement to make use of the new metering and communication system should be accompanied by robust consumer education and outreach to customers to obtain their awareness of and participation in approved programs
Impact of HIA on subsequent decisions and/or affected populations	The HIA was presented to the Illinois Commerce Commission (responsible for reviewing the proposal for AMI deployment). Results are still pending
Cost and Funding Source for HIA	Health Impact Project, National Center for Medical-Legal Partnership (NCMLP), Citizens Utility Board
Quantitative Results	None
Limitations	Difficult to quantify reliability of AMI service as regulators do not capture these metrics. Because of this, reliability of storm or disaster-related outages was difficult to assess
Peer Reviewed?	Yes

Table B.42: The Health Impact Assessment of the Commonwealth Edison Advanced Metering Infrastructure Deployment

General HIA Information (name, work group, location, year)	<i>Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment</i> ; Kentucky Department for Public Health; KY; 2012 (Territorial Health Officials 2012)
Timeframe	9 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Worksite wellness tax credit
Methods	Literature review, data analysis, consultation with experts
Scoping: Health determinants affected by the decision	Nutrition, physical activity, and obesity levels of children whose parents receive Worksite Wellness services; Jobs; Social cohesion
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Population of KY Disparities: wholesale/retail, transportation, finance, and agriculture/mining are less likely to have comprehensive worksite wellness programming. Smaller worksites are the most lacking in worksite wellness programs. Vulnerable: children, low income individuals and families, less educated individuals, employees of small businesses, minorities, and those in isolated regions of the state Qualitative: Worksite wellness programs would promote physical activity in children, increase the consumption of more fruit and vegetables, provide education about the importance of limiting sweetened beverages, and promote breastfeeding. It will also promote healthier families, provide support for parents working for small companies, increase jobs in the wellness sector as well as increasing jobs for vulnerable populations, and strengthen the economy. In addition, job satisfaction and productivity will increase
Baseline health and socio-demographic profile of those impacted	Kentucky ranks 3rd in the nation for childhood obesity. 16% of children are overweight, 18% are obese. About 355,000 Kentuckians are underemployed. Kentucky is ranked 40th in the nation for percentage of low-income working families. KY state unemployment is 9.8%. KY ranked 49th in emotional, life evaluation, and physical health, and 50th in healthy behavior by Gallup-Healthways
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Implement the Worksite Wellness Tax Credit. Conduct a statewide assessment of the current status of worksite wellness programs. Create a statewide worksite wellness council/panel. Create a center of excellence for worksite wellness. Provide a qualified consultant at the regional and local level to support worksite wellness programs. Offer wellness programming to provide education for parents in the worksite. Educate employers on the benefits of providing wellness programs for employees and their families. Set standards for quality wellness programs for the worksite wellness tax credits to be successful
Impact of HIA on subsequent decisions and/or affected populations	Because of the HIA, state legislators brought the bill up for consideration. Results are still pending
Cost and Funding Source for HIA	Association of State and Territorial Health Officials- \$15,000
Quantitative Results	None
Limitations	Data gap, particularly in the lack of information on worksite wellness programs in KY; time
Peer Reviewed?	Yes

Table B.43: Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of the Healthy Families Act of 2009: Maine Addendum- A Health Impact Assessment of Paid Sick Days in Maine</i> ; Human Impact Partners; Maine; 2009 (Heller 2009)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Policy to increase paid sick days (employees of large businesses would accrue one hour of paid sick time for every 40 hours worked, employees of small businesses would accrue one hour for every 80 hours worked)
Methods	Reviewed existing relevant Maine law, literature review, focus groups
Scoping: Health determinants affected by the decision	Health care service utilization, communicable disease transmission (foodborne illness and influenza)
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: over 40% of the Maine workforce would be directly affected- over 250,000 workers in the state lack paid sick days Disparities: Please see the national HIA report Qualitative: As discussed in the national HIA report, paid sick days may help reduce the transmission of communicable disease, such as gastroenteritis and influenza
Baseline health and socio-demographic profile of those impacted	In 2006, 1.5% of hospitalizations (over 15,000 hospitalizations) for people 18 and over in Maine were preventable. In 2006, Maine's emergency department use was about 30% higher than the national average; 30% of Maine's population visited an ER in 2006. Uninsured patients account for 9% of ER visits. Over 17% of ER visits are classified as avoidable. In 2007, there were 99 disease outbreaks reported to the Department of Health and Human Services (75 were from gastroenteritis, 64 of which involved or were suspected to involve norovirus. 10 influenza cases were reported at long term care facilities, and 5 were reported at schools and daycare centers)
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Please see the national HIA report
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Cost not reported; funding from Maine Health Access Foundation and Family Values @ Work: A Multi-state Consortium
Quantitative Results	None
Limitations	Limited availability of data on how access to paid sick days affects health
Peer Reviewed?	Yes

Table B.44: A Health Impact Assessment of the Healthy Families Act of 2009: Maine Addendum

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of the Healthy Families Act of 2009: Massachusetts Addendum-A Health Impact Assessment of An Act Establishing Paid Sick Days; SB 688; HB 1815; Human Impact Partners; MA; 2009 (Heller & Cook 2009)</i>
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	An Act Establishing Paid Sick Days SB 688 and HB 1815 (pending in the Massachusetts state legislature)
Methods	Literature review, multivariate logistic regression analysis of National Health Interview Survey (NHIS) data, focus groups, survey administered to workers
Scoping: Health determinants affected by the decision	Avoidable hospitalizations and emergency room visits, communicable disease transmission (foodborne illness and influenza)
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: over 40% of the Massachusetts workforce would be directly affected by the legislation being considered Disparities: Please see the national HIA report Qualitative: Please see the national HIA report. Lack of paid sick days may create a barrier to the utilization of primary and preventative care, and could increase the utilization of more expensive therapeutic and hospital care. Access to paid sick days is not a significant predictor of medical visits for working adults with health insurance, but is a significant protective factor from ER visits and from delayed family care for working adults with health insurance. Paid sick days may be one approach to helping the state of MA achieve its goal of reducing high healthcare costs associated with ER visits
Baseline health and socio-demographic profile of those impacted	About 693,000 workers in the state currently have no paid leave at all and about 1,404,000 private-sector workers in the state lack paid sick days specifically. ER visits have not changed significantly in Boston between 2005 and 2008, despite the implementation of nearly universal health care. ER visits by 18-64 year olds in Boston for diabetes or hypertension (both preventable ER visits) also stayed consistent during this period. In 2002 and 2003 there were 224,306 preventable hospitalizations and 631,061 preventable ER visits. From 2003-2007, 55 outbreaks and 1,929 outbreak-related diseases in MA were reported to the CDC. The majority of those cases involved food prepared in institutional or workplace settings. 14 influenza outbreaks were reported between 2003 and 2008 at long term care facilities in Boston
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Please see the national HIA report
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Cost not reported; funding from the Blue Cross Blue Shield of Massachusetts Foundation, Annie E. Casey Foundation and Family Values @ Work: A Multi-State Consortium
Quantitative Results	None
Limitations	Limited research on the benefits of paid sick days on the family's health or health care access. Limitations to the NHIS data (for instance, it did not include data on the circumstances under which medical visits were made). Limited availability of data on how access to paid sick days affects health
Peer Reviewed?	Yes

Table B.45: A Health Impact Assessment of the Healthy Families Act of 2009: Massachusetts Addendum

General HIA Information (name, work group, location, year)	<i>Pathways to Community Health: Evaluating the Healthfulness of Affordable Housing Opportunity Sites along the San Pablo Avenue Corridor Using Health Impact Assessment</i> ; Human Impact Partners; El Cerrito and Richmond, CA; 2009 (Anon 2009d)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	3 alternative sites in the San Pablo Avenue corridor for affordable housing (San Pablo Area Specific Plan): Albertsons grocery store site, Mayfair site, Target store site
Methods	Literature review, GIS mapping, air quality and noise exposure assessment, human health risk assessment, HDMT
Scoping: Health determinants affected by the decision	Exposure to environmental hazards, proximity to public transportation, access to parks and trails, access to public and private services (schools, community centers, retail), safety and quality of the pedestrian environment, levels of concentrated poverty
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: current and future population of the San Pablo Avenue Corridor Disparities: Low-income households buy inexpensive fast food because their communities lack full-service supermarkets Qualitative: All 3 alternative sites would encourage physical activity as retail outlets are in close proximity. The Albertsons site has a grocery store, fewer fast food restaurants and a lack of liquor stores within a 1/2-mile radius. It meets the HDMT targets for key retail services, but is lacking in access to public services; the other 2 sites are lacking in access to retail outlets such as supermarkets. Public transportation is available at all three sites, and would promote physical activity while providing access to goods and services. Each of the proposed sites is located near the Ohlone Greenway, which will have positive impacts on physical activity, recreation and transportation. Schools close to any of the sites are mostly private, preventing low-income children from attending schools close to home. The Albertsons site would expose school children to poor quality education at schools where poverty is more common, which could lead to exposure to violence and crime and negative associated physical and mental health outcomes. None of the potential sites will promote non-vehicular transportation to school. All 3 sites have access to community or senior centers via mass transit, which could promote physical activity and mental health benefits, though more health benefits would be seen at the Mayfair and Target sites. The Albertsons site may present a lower risk of pedestrian/vehicle collisions than the other sites. Between the sites, there is a small difference with respect to noise pollution from San Pablo Avenue. The Mayfair and Target sites will have lower premature mortality rates than the Albertsons site. The Albertsons site is located in a poorer area than the other two sites, and crime and violence rates are higher
Baseline health and socio-demographic profile of those impacted	20.% of workers 16 or older in El Cerrito use public transportation to get to work. In Richmond, 15.2% of residents 16 or older use public transportation to commute to work. At the Adams Middle School and Kennedy High School, over 70% of students are from economically disadvantaged families. Mira Vista Elementary School has 53.2% of students who are economically disadvantaged. At Adams Middle School, 23.7% of students demonstrated proficiency in English, and 17.1% demonstrated proficiency in math. At Portola Junior High, 25.2% of students demonstrated English proficiency, and 35.8% of students demonstrated math proficiency. Madera Elementary has 17.1% of students classified as economically disadvantaged, and El Cerrito Senior high has 23% of students classified as economically disadvantaged. 60.5% of students at Portola Junior High School are economically disadvantaged. In the Albertsons site area, 12-18% of households are living below the federal poverty line, and the employment rate is 9-13%. The median household income within a 1/4 of a mile radius was \$39,565, and within a 1/2 a mile radius it was \$52,825 (2000 census). At the Mayfair site, 6-11% of households are living below the federal poverty line, with a median household income within a 1/4 of a mile at \$54,464, and at a 1/2 a mile at \$56,326. The Target site also has 6-11% of residents living below the poverty line, but within a 1/4 of a mile radius, the median household income was \$50,312, and within a 1/2 a mile radius it was \$56,558
How does the HIA convey uncertainty?	N/A

Recommendations to decision makers and stakeholders	The Mayfair and Target sites should include ground floor retail space used to sell healthy food items. Farmers markets should also be instituted, in addition to childcare centers at the Mayfair and Target sites. Residents of the potential affordable housing site should be supplied with free or reduced-cost AC Transit passes. Car share memberships and parking should also be considered. Conduct a needs assessment for local park programming. Increase the safety and maintenance of existing parks. Raise awareness about local parks and trails by collaborating with schools. Require the new housing development to provide on-site open space and recreational facilities. Include plans for a new elementary school in the area plan, and institute safe bike and pedestrian infrastructure in Richmond and El Cerrito. Implement noise and air pollution mitigation strategies. Affordable housing should be offered in the context of a mixed-income development plan.
Impact of HIA on subsequent decisions and/or affected populations	The findings of the HIA were used to produce a letter containing health-based recommendations that was sent to City Council. Results are still pending
Cost and Funding Source for HIA	Not reported
Quantitative Results	The risk of high annoyance from noise pollution from San Pablo Avenue is between 14-20% depending on the location within the site. Relative risk associated with a unit change in PM 2.5 for Contra Costa County is 1.014. The pre-mature mortality per million population at any site is estimated to be 33-44, resulting from high traffic volumes (3% heavy vehicles). With 25% heavy vehicles, the pre-mature mortality per million population would be 113-157
Limitations	Not reported
Peer Reviewed?	Yes

Table B.46: Pathways to Community Health: Evaluating the Healthfulness of Affordable Housing Opportunity Sites along the San Pablo Avenue Corridor Using Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of Paid Sick Days: New Jersey Addendum</i> ; Human Impact Partners, Rutgers Center for Women and Work, and NJ Time to Care; NJ; 2011 (Anon 2011a)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Paid sick days policies
Methods	Literature Review, data analysis, focus groups
Scoping: Health determinants affected by the decision	Please see Healthy Families Act of 2009 HIA
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: employees in NJ Disparities: households with low median incomes (less than \$25,000) have the greatest number of preventable hospitalizations Qualitative: Please see Healthy Families Act of 2009 HIA. Without paid sick days, workers have restricted access to primary and preventative care, which may result in the use of more expensive remedies. Lack of paid sick days results in delayed care and longer recovery times, and may also result in loss of job/wages
Baseline health and socio-demographic profile of those impacted	38% of NJ's private sector workforce lacked paid sick days in 2010. 76% of service sector workers lack paid sick days compared to 13% of management workers. In 2005, there were over 1,125,000 hospitalizations in NJ, 13% of which were preventable. During the same year, there were 3,000,000 emergency department visits, and in 2007 there were 3,100,000 ED visits. From 2005 to 2009, there were 380 norovirus/acute gastroenteritis outbreaks, most occurring in workplace and institutional settings. From 2003-2007, there were 57 foodborne disease outbreaks and 1,562 related cases of illness. 67% of these outbreaks and 59% of these cases occurred in institutional and workplace settings. From 2006 to 2009, there were 84 influenza/influenza-like outbreaks. 69 occurred in long-term care facilities, the remaining outbreaks occurred in schools, daycares, jails etc.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Please see Healthy Families Act of 2009 HIA
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.47: A Health Impact Assessment of Paid Sick Days: New Jersey Addendum

General HIA Information (name, work group, location, year)	<i>Paid Sick Days Will Improve the Health of all Milwaukee Residents</i> ; Human Impact Partners; WI; 2008 (Anon 2008)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Paid sick days policies
Methods	Please see Health Families Act of 2009 HIA
Scoping: Health determinants affected by the decision	Please see Health Families Act of 2009 HIA
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: workers in Milwaukee Disparities: Please see Health Families Act of 2009 HIA Qualitative: Paid sick days may: reduce flu transmission; result in safer restaurants; decrease stomach flu outbreaks in nursing homes; allow workers to care for sick dependents; protect workers from employment termination and income loss during periods of illness
Baseline health and socio-demographic profile of those impacted	From 2003-2007 there were 3,187 cases of outbreak-related food-borne illnesses reported in WI. Of these, 112 people were hospitalized, and 3 died. 93% of these cases occurred in public places. From 2003-2007 in Milwaukee, there were 302 cases of outbreak-related food-borne illnesses and 9 hospitalizations reported. In 2007, there were 1641 cases of norovirus infections reported in WI nursing homes. 22 hospitalizations and 2 deaths resulted. 122,230 Milwaukee residents lack paid sick days
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	All workers in Milwaukee deserve paid sick days
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.48: Paid Sick Days Will Improve the Health of all Milwaukee Residents

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of the Healthy Families Act of 2009- New Hampshire Addendum; Paid Sick Days: A Strategy to Reduce Communicable Disease Transmission in New Hampshire; Paid Sick Days: A Strategy to Reduce Emergency Room Visits in New Hampshire; Human Impact Partners; NH; 2009 (Anon 2009b; Anon 2009a; Anon 2009c)</i>
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Legislation (HB 662) to ensure paid sick days for all workers in NH
Methods	Please see Health Families Act of 2009 HIA
Scoping: Health determinants affected by the decision	Please see Health Families Act of 2009 HIA
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Workers in NH Disparities: Please see Health Families Act of 2009 HIA Qualitative: Paid sick days may: reduce transmission of communicable diseases; increase the safety of restaurants; reduce outbreaks of communicable disease in nursing homes; reduce medical costs as a result of decreased ER and hospital use
Baseline health and socio-demographic profile of those impacted	24% of lodging/food services firms in NH provided paid sick days to full-time workers in 2007. 9% provided paid sick days to part-time workers. 83% of professional services firms provided paid sick days to full-time workers, and 48% provided them to part-time workers. 39 reported foodborne disease outbreaks, with 616 people involved, occurred from 2004-2008. 89% of these reported outbreaks occurred in public places. From 2006 to 2008, 5,392 cases of outbreak-related gastrointestinal illness occurred among nursing home residents. 39 outbreaks of respiratory illness occurred during the same period, all caused by person-to-person contact. 50% of NH firms in 2007 did not offer paid sick days to full-time workers, and 80% of firms did not offer them to part-time workers. From 2001-2005 there were 431,227 preventable ER visits and 85,906 preventable hospitalizations
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	All workers in New Hampshire deserve paid sick days
Impact of HIA on subsequent decisions and/or affected populations	Not reported
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.49: A Health Impact Assessment of the Healthy Families Act of 2009: New Hampshire Addendum

General HIA Information (name, work group, location, year)	<i>Paid Sick Days will Improve the Health of all Denver Residents</i> ; Human Impact Partners; Denver, CO; 2011 (Anon 2011b)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Paid sick days ballot measure
Methods	Please see Health Families Act of 2009 HIA
Scoping: Health determinants affected by the decision	Please see Health Families Act of 2009 HIA
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: workers in Denver Disparities: Please see Health Families Act of 2009 HIA Qualitative: Paid sick days may: reduce flu transmission; increase the safety of restaurants; reduce outbreaks of stomach flu in nursing homes; result in decreased use of the emergency room and a reduction in preventable hospitalizations; protect against loss of income and threat of job loss during times of illness
Baseline health and socio-demographic profile of those impacted	28% of Denver food preparation/serving workers have paid sick days. 87% of workers in managerial positions have paid sick days. From 2006-2010 there were 221 reported foodborne illnesses, and 6 foodborne related hospitalizations from outbreaks in restaurants, hotels, and long term care facilities. 526 cases of norovirus in 24 outbreaks in facilities for the elderly occurred from 2010 to 2011, 5 of which resulted in hospitalization. 25,000 hospital admissions for chronic diseases per year are preventable
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	All workers in Denver deserve paid sick days
Impact of HIA on subsequent decisions and/or affected populations	The paid sick days ballot measure passed with 69% of the vote, though it is unclear if the HIA influenced the voting outcome
Cost and Funding Source for HIA	Not reported
Quantitative Results	None
Limitations	Not reported
Peer Reviewed?	Yes

Table B.50: Paid Sick Days Will Improve the Health of All Denver Residents

General HIA Information (name, work group, location, year)	<i>A Health Impact Assessment of the California Healthy Families, Healthy Workplaces Act of 2008</i> ; Human Impact Partners and the San Francisco Department of Public Health; Oakland, CA; 2008 (Bhatia et al. 2008)
Timeframe	Not reported
Incorporated into EIA/other assessment?	Yes, Healthy Families Act of 2009 HIA
Proposed policy, plan, program or project	Healthy Families, Healthy Workplaces Act of 2008 (AB 2716)
Methods	Focus groups, surveys among workers, logic frameworks, secondary data review
Scoping: Health determinants affected by the decision	Utilization of sick leave; recovery from illness, primary care utilization, preventable hospitalizations; communicable disease transmission; wage loss, risk of job loss, employer retaliation
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: workers in California Disparities: N/A Qualitative: workers with paid sick leave will miss more workdays due to illness/injury than those without. Paid sick leave will also increase the number of workers taking time off to care for ill dependents. Paid sick days will increase compliance with public health guidance for seasonal and pandemic flu, and reduce disease transmission in the workplace. With paid sick days, low-income workers would experience less income loss and threats of job loss
Baseline health and socio-demographic profile of those impacted	39% of workers in California lack paid sick days. Paid sick days were the highest among workers in information (89%), management (84%), and finance and insurance (83%), and the lowest among workers in construction (22%), administrative and waste services (28%), and accommodation and food service (30%). The hospitalization rate for pediatric asthma is 134 hospitalizations per 100,000
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Approve the California Healthy Families, Healthy Workplaces Act of 2008
Impact of HIA on subsequent decisions and/or affected populations	The HIA findings were used by legislative sponsors to create wide media coverage, which helped to promote AB 2716 as a matter of public health. The legislation was approved by the State Assembly, but stalled in the Senate Appropriations Committee
Cost and Funding Source for HIA	Cost not reported; partial funding from Unitarian Universalist Veatch Program at Shelter Rock
Quantitative Results	None
Limitations	Limited timeframe to complete HIA before the bill was decided upon by legislature. Limited funding, limited research capacity and resources. Limited empirical research on the connection between paid sick days and health
Peer Reviewed?	Yes

Table B.51: A Health Impact Assessment of the California Healthy Families, Healthy Workplaces Act of 2008

General HIA Information (name, work group, location, year)	<i>Rock Prairie Dairy Rapid Health Impact Assessment; Rock County Health Department; Bradford, WI; 2011 (Elmer & Wesson 2011)</i>
Timeframe	5 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Rock Prairie Dairy (RPD)
Methods	Rapid HIA; reviewed comments and concerns from public hearings conducted as part of the regulatory approval process, examined local media coverage of the proposed project, analyzed the RPD proposed design and operational strategies, literature review, reviewed statutes and administrative codes related to large animal operations, interviews with stakeholders, conducted a community survey
Scoping: Health determinants affected by the decision	Hazardous gas and particulate emissions, nuisance odors, groundwater quality, surface water quality, economic impact, traffic, noise, visual, insect-borne disease
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: dairy workers, residents living close to the site, recreational users of waterways, fish, wildlife, local property owners, local businesses, farmers, motorists near the intersection of HWY 14 and Scharine Rd. Disparities: N/A Qualitative: Dairy workers will be exposed to high levels of hazardous gases, but it is difficult to predict health risks to residents downwind from the source. Emission exposure risk to the community should be minimal. Land application of manure will have the most potential for releasing unhealthy emissions into the surrounding community. Odors from the RPD may cause psychological effects. There is potential for groundwater and surface water contamination and associated health impacts. Increased traffic may cause more vehicular accidents. RPD employees may be at risk for negative physical impacts to their hearing
Baseline health and socio-demographic profile of those impacted	The population of Bradford was 1,121 in 2010. 98.7% of the town is white.
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Proper safety procedures should be required and strictly enforced. Workers should have access to proper safety training, use of self-contained breathing apparatus, lifeline systems, and the facility should undergo hazardous testing and have warning signs. A private well monitoring program for residents near the facility/application sites should be implemented. Residents should be notified of manure spreading activities. Develop a complaint tracking and collection system. Increase surface water monitoring. Develop on- and off-site emission monitoring systems. Provide workers with health and wellness programs. Institute insect control. Use vegetation buffers to decrease aesthetic, noise, odor and emission impacts. Install road signs along Highway 14 warning traffic of frequent stops by trucks
Impact of HIA on subsequent decisions and/or affected populations	The Town of Bradford has shown interest in the findings, and the Rock County Health Department has committed to increase surface water sampling in Spring Brook and Turtle Creek and is in the process of designing a groundwater-monitoring program for the area. The influence of the report on the decision makers and the affected population cannot be determined at this time
Cost and Funding Source for HIA	Wisconsin Department of Health Services, Bureau of Environmental and Occupational Health- \$10,000
Quantitative Results	None
Limitations	Time, data deficiencies (no animal operations similar in size and design in the geographical area of the proposed site). Limited research on exposure rates to emissions to the surrounding community beyond the property lines of CAFOs. Specific air quality data for the proposed facility is not available for emissions of concern
Peer Reviewed?	No

Table B.52: Rock Prairie Dairy Rapid Health Impact Assessment

General HIA Information (name, work group, location, year)	<i>Rapid Health Impact Assessment: Vancouver Comprehensive Growth Management Plan 2011</i> ; Clark County Public Health; Vancouver, WA; 2011 (Haggerty et al. 2011)
Timeframe	6 months
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	2011 Comprehensive Plan update
Methods	Rapid HIA; data analysis, literature review
Scoping: Health determinants affected by the decision	Physical activity, access to healthy food
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: Residents of Vancouver Disparities: Low-income residents, racial and ethnic minorities, youth, and the elderly population are the affected by health disparities such as access to physical activity and healthy food Qualitative: Planning direction changed in the Community Development chapter of the comprehensive plan will have positive impacts on community health. Rezoning changes will result in minimal impacts to public health, but if any, the impact will likely be positive
Baseline health and socio-demographic profile of those impacted	71% of residents live within a half-mile of a park, 70% live within a half mile of a bikeway, 24% live within a half mile of healthy food retail, and 58% live within a half mile of fast food or convenience stores. 30% of Vancouver adults are obese, and 33% are overweight. 24% of adults older than 25 have a bachelor's degree. 15% of residents have incomes below the federal poverty line. 10% of residents are Hispanic or Latino, 5% are Asian, 3% are black and 76% are non-Hispanic white
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Develop land uses and transportation networks that support physical activity; enhance connectivity; manage parking to encourage active transportation and efficient land use; increase safety and quality of pedestrian and bicycle infrastructure; increase the use of active transportation modes; reduce disparities in access to physical activity and protect vulnerable populations; recruit and retain healthy food retail; promote opportunities to grow food in home and community gardens; reduce the availability of unhealthy food options relative to healthy food options; promote food security; reduce disparities in food access and protect vulnerable populations
Impact of HIA on subsequent decisions and/or affected populations	The HIA was taken into consideration and influenced the policies adopted as part of the city's comprehensive plan (Nov 2011). The comprehensive plan referenced the HIA and included maps developed for the HIA
Cost and Funding Source for HIA	Northwest Health Foundation- \$30,000
Quantitative Results	None
Limitations	Data gaps existed for: qualitative data on existing bicycle and pedestrian infrastructure, comprehensive inventory of pedestrian facilities, record-level local health data linked to built environment data, morbidity data by neighborhood, physical activity data by neighborhood, data on racial/ethnic disparities
Peer Reviewed?	No

Table B.53: Rapid Health Impact Assessment: Vancouver Comprehensive Growth Management Plan 2011

General HIA Information (name, work group, location, year)	<i>Hospitals and Community Health HIA: A Study of Localized Health Impacts of Hospitals</i> ; Center for Quality and Regional Development at the Georgia Institute of Technology; Atlanta, GA; 2008; © (Ross et al. 2008)
Timeframe	Not reported
Incorporated into EIA/other assessment?	No
Proposed policy, plan, program or project	Piedmont Hospital
Methods	Retrospective HIA; walkability audit, stakeholder meetings, community meetings, meetings with elected officials, data analysis, mapping; literature review
Scoping: Health determinants affected by the decision	Automobile traffic; access and connectivity
Assessment: Population affected; health disparities identified; qualitative estimates of health impacts	Population: residents surrounding the Piedmont Hospital, employees of the hospital, employees of surrounding businesses, patients and visitors to the hospital Disparities: Vulnerable: elderly, children, renters, low-income residents, residents without automobiles Qualitative: traffic counts indicate that traffic has decreased in recent years. Further development will increase the amount of traffic, which would increase the number of potential automobile accidents. The study area experiences some problems with noise (due to I-75, I-85, Peachtree Rd, ambulances, helicopters, and delivery vehicles). The study area has great access to healthy foods, but is lacking in quality pedestrian and cyclist infrastructure. Ongoing transit developments may increase connectivity and encourage non-motorized forms of transit
Baseline health and socio-demographic profile of those impacted	Average per capita income of \$47,108. Less than 10% of residents under the poverty level. 86.6% white, 13.4% non-white
How does the HIA convey uncertainty?	N/A
Recommendations to decision makers and stakeholders	Create sidewalks with buffers to protect pedestrians from vehicles. Increase lighting. Add bike lanes. Promote communication between hospital and community groups. Increase health education. Provide additional transportation to and from the hospital. Improve pedestrian and vehicle signage around the hospital. Improve the quality and safety of pedestrian and bike lane infrastructure. Reduce hospital emissions and pollutants. Implement traffic calming measures. Members of the community and hospital representative should form a board to determine responses to changes caused by development that could negatively impact health.
Impact of HIA on subsequent decisions and/or affected populations	The HIA led decision-makers, city planners and public health experts to discuss ways to promote a healthy environment for the population affected by the hospital
Cost and Funding Source for HIA	Not reported
Quantitative Results	N/A
Limitations	Data limitations
Peer Reviewed?	No

Table B.54: Hospitals and Community Health HIA: A Study of Localized Health Impacts of Hospitals

Question	Response	
How many HIAs have you worked on or been involved with?	Average: 2.625 Standard Deviation: 2.634 Variance: 6.940	
Do you feel that the technical resources available to assist you with the HIA process were sufficient? Examples of technical resources include HIA materials on the internet, HIA experts available for consultation, and HIA tool kits.	Yes	No
	91%	9%
How do you think available technical resources may be improved?	(1) There were few resources regarding working with an interdisciplinary team or for utilizing community engagement input. (2) Need more people who can provide experience-based training and TA for various types of HIA projects	

Question	Response							
<p>In your opinion, what was the most valuable source of information you used to learn the HIA process?</p>	Training sessions	Hearing transcripts	Other completed HIAs	Colleagues experience	Expert consultants	Department of Health Services	Published guidelines	Workshops
	<p>Cited by 6 HIA practitioners. Responses included: a training session conducted by HIP in 2008 in Corvallis, OR; training from the CDC; state staff; training from experienced HIA practitioners</p>	<p>Cited by 1 HIA practitioner</p>	<p>Cited by 2 HIA practitioners</p>	<p>Cited by 3 HIA practitioners</p>	<p>Cited by 4 HIA practitioners. Included consultation with the Health Impact Project and Aaron Wernham</p>	<p>Cited by 1 HIA practitioner</p>	<p>Cited by 6 HIA practitioners. Included: Health Impact Assessment: A Practical Guide by Harris et al.; Minimum Elements and Practice Standards for Health Impact Assessment by the North American HIA Practice Standards Working Group; Improving the Health in the United States by the National Research Council; A Health Impact Assessment Toolkit: A Handbook to Conducting HIA by Human Impact Partners</p>	<p>Cited by 1 HIA practitioner. Referred to the HIA in the Americas Workshop</p>

Question	Response				
	HIA's were funded entirely by external sources	HIA's were funded partially by external sources and partially by internal sources	HIA's were funded entirely by internal sources	HIA's were not funded- HIA practitioners volunteered their time	Other
Was there sufficient financial support available for the HIA(s) you worked on?	37.50%	37.50%	12.50%	4.17%	8.33%: (1) The HIA was funded partially by external sources (grant funding) and by in-kind support; (2) the HIA was funded by Pew and the RWJ Foundation, but almost all partners worked over and wound up giving in-kind donations of staff time and resources beyond the original grant.
"Including quantitative health risk information in an HIA makes decision-makers more likely to view the HIA as credible."	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
	4%	4%	17%	46%	29%
"Including quantitative health risk information in the HIA has no effect on whether decision-makers view the HIA as credible."	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
	33%	42%	21%	4%	0%

Question	Response					
<p>“The HIAs I have conducted would have been more useful if we could have estimated the number of deaths, illnesses, or other health conditions associated with the alternatives we were evaluating.”</p>	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	HIA I conducted did include estimations of the number of deaths, illnesses or other health conditions associated with the health alternatives I evaluated
	0%	8%	13%	33%	29%	17%
<p>The main barriers to using quantitative health risk analysis in HIAs are (check all that apply):</p>	Lack of time	Lack of money	Lack of experience	Lack of secondary data	Other	
	52%	43%	48%	70%	22%: (1) imprecision in the alternatives and the evidence base linking changes in the physical environment to health outcomes; (2) sometimes, you just can't draw those connections (no research to support it); (3) lack of direct connection with subject matter and reliance on secondary data-- didn't realize that the HIA drew so much on secondary data; (4) lack of common metrics that would allow for direct comparison of multiple impacts/outcomes.	

Question	Response			
If training materials (on-line or in-person courses or written materials) on how to carry out quantitative health risk analysis as part of an HIA were available, how likely is it that you would participate?	Very likely	Somewhat likely	Not very likely	Definitely would not
	39%	39%	22%	0%

Question	Response				
	Increase publicity	Increase data collection	The HIA process does not need to change	Develop relationships with stakeholders and decision-makers; Include them in the HIA process	Other
How can the HIA process be improved to increase decision-makers interest in and response to findings?	Cited by 3 HIA practitioners	Cited by 3 HIA practitioners	Cited by 2 HIA practitioners. Comments included: (1) Decision-makers need to understand that health is an integral part of planning public projects, crafting new policies, and starting new programs; (2) Decision-makers need to be able to look at the information in an objective manner	Cited by 7 HIA practitioners. Comments included: (1) Including decision-makers in the screening and scoping stages; (2) increasing HIA practitioners familiarity with decision making processes	(1) Increase technical support related to data outcomes; (2) clear and consistent language; (3) HIAs should be initiated before issues are identified by policy makers. Data should drive the discussion about potential problems; (4) increase funding; (5) HIAs should be completed at a point in the decision-making process where significant impact can still be made; (6) Scope needs to be narrowed down to focus on a direct policy question, rather than examining a broad question; (7) Process needs to be more unbiased-- practitioners should not begin with the assumption that the question and policy choices are already determined. HIA evidence should speak for itself; (8) By making it more relevant to issues that are important to their constituents. By seeking out proponents for support.

Question	Response										
Please indicate your highest level of education:	Less than high school graduate/GED	High school graduate/GED	Some college	Associates degree	College graduate	Master's degree	Ph.D.	M.D.	M.D.-Ph.D.	J.D.	Other professional degree
	0%	0%	4%	0%	21%	38%	17%	4%	4%	4%	8%: Ed.D. and Ph.D. candidate.
Please indicate the areas of study for the higher degree(s) you have earned:	College graduate				Master's degree			Ph.D.			
	Communications-radio; Creative writing/health education; Dietetics and public health; Physical education/health education; Anthropology and human biology; Urban planning (2); Psychology; Biology; Environmental science; Political science; History and anthropology				Public health-health behavior and health education; community health; epidemiology; urban planning; city planning, sociology/public health, city planning; urban and regional planning; economics/MPH; MPH			Health promotion; Urban studies and planning; Urban studies			

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